PROCEEDINGS

OF THE

MADRAS GOVERNMENT

IN THE

PUBLIC WORKS DEPARTMENT.

IRRIGATION BRANCH,

FOR THE

MONTH OF NOVEMBER 1892.

Printed by Authority.

MADRAS:
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

1892.

INDEX

TO THE

TABLE OF CONTENTS AND TABULAR STATEMENT OF MISCELLANEOUS PROCEEDINGS AND MATTERS OF ROUTINE,

IRRIGATION,

FOR THE MONTH OF NOVEMBER 1892.

	—	Page.
A		
Anicut across the Rushikulya river.—Construction of an — near the village of Tippalapotra	Regular.	4
B		
C		
Coleroon river bank.—Estimate for closing breaches in the — ...	Regular.	4
Chuttrapatty anicut.—Estimate for a head sluice and extending the —, &c.	Regular.	6
Credit for No. I Periyár division for November 1892	Routine.	2
Civil Account Code.—Supply of the 5th edition of vol. I of the — ...	Routine.	6
Compensation for land.—Delay in the settlement of — taken up for irrigation purposes, Nellore district	Routine.	7
Compensation cases.—Explanation for the delay in the disposal of certain — in Nellore	Routine.	7
D		
E		
Estimates.—Statement showing the — by the Public Works Department from Local Irrigation cess fund for 1893–94	Routine.	4
Excess outlay under "43. Minor Works and Navigation"	Routine.	4
F		
Funds	Regular.	1

	—	Page.
Funds	Regular.	1
Floating plant.—Estimate of the cost of maintaining the —	Regular.	2
Funds	Regular.	2
Funds	Regular.	5
Floating plant, Kistna delta.—Estimate for maintaining the — ...	Regular.	6
G		
Gadávari left embankment.—Excess outlay on raising the —	Regular.	2
Godávari system of canals.—Statements showing Navigation receipts and charges of the — for 1891–92	Regular.	2
Godávari delta.—Rupees 5,000 for repairing damages to works in the —	Regular.	3
Godávari delta works.—Revised schedule of the —	Regular.	3
Godávari right bank.—Local fund share of the amount for raising the —	Routine.	8
H		
Head sluice asked for by the inhabitants of Periyapolliam, Chingleput district	Regular.	4
I		
Irrigation and Navigation works.—Statements of financial results of —.	Regular.	2
Irrigation works in Patukóta taluk.—Restoration of the —	Regular.	2
J		
K		
Kondigai channel, Madura taluk.—Refund of certain outlay incurred by Mr. Fischer in repairing the —	Regular.	2
Kistna river right flood bank.—Breach in the —	Regular.	4
Kurnool-Cuddapah canal telegraph lines.—Closing of the accounts in connection with the —	Regular.	5
Kistna delta system.—Estimate for a rolled iron girder bridge, Tungabhadra drain	Regular.	6
Kistna delta system.—Estimate for a rolled iron girder bridge, Pedalanka drain	Regular.	6
Kalingaroyan channel.—Levy of a local cess on irrigation under the —	Routine.	7

	—	Page.
L		
Land required for excavating a jungle stream in Moguthur village ...	Routine.	1
Land for the Chittampatti off-take, 9th branch channel, Periyár Project	Routine.	2
Land in the Madura taluk required for the 11th reach, Periyár channel	Routine.	2
Land in the villages of Mangalam, &c., Madura district, required for the 10th branch channel	Routine.	2
Land required for the Gostanadi channel in Bhímavaram	Routine.	2
Land required for Lock establishment quarters at Yandagandi, Bhímavaram taluk	Routine.	3
Land required for repairing Chinnamiran main drain at Vempad in Bhímavaram taluk	Routine.	3
Land required for repairing Polamuru drain in Namuduru, Bhímavaram taluk	Routine.	3
Land required for Annagacodu drain in Kalamapudi village, Bhímavaram taluk	Routine.	3
Land required for Tokkadu drain in Machapuri, Narsápur taluk ...	Routine.	3
Land required for Tokkadu drain in Tummalapalli, Narsápur taluk ...	Routine.	3
Land required for repairing Peeralacodu drain at Víravásaram ...	Routine.	3
Land required for the extension of Azzamur channel in Dodanapudi village	Routine.	3
Land required for repairing Cherukumille channel, in Cherukumille.	Routine.	3
Land required for repairing Gostanadi channel at Palakoderu, Bhímavaram taluk	Routine.	3
Lands in the villages of Ambunabadi and Sommiaguda in the Ganjam district	Routine.	7
Land required for Periyár Project works in the Madura district ...	Routine.	7
Land required for the repair of the Tirumalrajan right bank in Keelapalayur, Kumbakónam taluk	Routine.	8
Land required for Pappagudi off-take, 9th branch channel, Madura district	Routine.	8
Lands required for the Southern channel, left bank, Nellore district ...	Routine.	8
Land required for diverting river bank at Viswanadapulli, Kistna district	Routine.	8
Land required for extension of Gostanadi channel in Kumadavilly, Bhímavaram taluk	Routine.	3
Land required for repairing Gostanadi channel in Palakoderu, Bhímavaram taluk	Routine.	3
Land required for Duvvur branch channel extension, Nellore district.	Routine.	4

	—	Page.
Land required for bunding Inapur breach, Núzvíd taluk, Kistna district	Routine.	2
Land required for the Varni tank-bund, Nellore district	Routine.	2
Land required for excavation of the proposed branch of Penumadam branch of Konteru channel	Routine.	4
Land required for the right side parallel channel from Velivalu drain, Narsápur taluk	Routine.	4
Land required for improving Muthenucodu channel in Nadipalli, Bhímavaram taluk	Routine.	4
Lands for Vennár regulator right bank, Trichinopoly district ...	Routine.	5
Lands required for Commamur canal, Kistna district	Routine.	5
Lands for removing spoil heaps, &c., Commamur canal, Kistna district.	Routine.	5
Lands for constructing outlet in 43rd mile, Commamur canal ...	Routine.	5
Land in the villages of Runganathapuram and Puduppadaveedu, Kumbakónam taluk	Routine.	5
Land required for Sarvepalli channel, Nellore district	Routine.	5
Land required for the extension of Golivibaduva channel in Pemmarazapolavaram, Narsápur taluk	Routine.	6
Land for the extension of Muttancodu channel in Tundurru, Narsápur taluk	Routine.	6
Land required for repairing Achanta channel in Pittala Vemavaram, Godávari district	Routine.	6
Land required for diversion bank at Mapur breach, Núzvíd taluk, Kistna district	Routine.	6
Land improvement in India.—Colonel Fraser's pamphlet on — ...	Routine.	6
M		
Márkápur tank.—Estimates for works in connection with the — ...	Regular.	4
Maps connected with the French Territory	Routine.	1
Minor Irrigation works.—Review of the progress report on — up to end of July 1892	Routine.	4
Manginapudi canal.—Funds for the maintenance of the —	Routine.	4
Minor Irrigation works.—Review of the progress report of — for August and September 1892	Routine.	6
N		
O		
P		
Pullagacherry anicut —Payment of percentage charges in the case of the work "registering depth of water at the —, South Arcot division"	Regular.	2

	—	Page.
Pennár right flood embankment.—Estimate for compensation for land taken up for the —	Regular.	2
Periyár project.—Statement showing redistribution of grant for the No. I Periyár division for 1892–93	Regular.	3
Periyár project.—Excess outlay on certain works in No. II Periyár division	Regular.	3
Periyár project.—Estimate for purchasing two stone crushers, &c. ...	Regular.	4
Perangeri channel.—Estimate for improvements to the —	Regular.	4
Patha-Cuddapah tank supply channel.—Orders for proceeding with the — work	Regular.	4
Periyár project.—Progress report of works, No. II Periyár division, for October 1892	Regular.	5
Periyár project.—Progress report of works, No. I Periyár division, for September 1892	Regular.	5
Periyár project.—Progress report of works, No. I Periyár division, for October 1892	Regular.	6
Periyár project.—Notes of inspection of the — by Colonel F. J. Home, R.E.	Routine.	1
Provincial statement of objectionable items, &c., V Circle	Routine.	1
Provincial statement of objectionable items, &c., V Circle	Routine.	3
Provincial statement of objectionable items, &c., III Circle	Routine.	4
Provincial statement of objectionable items, &c., IV Circle	Routine.	4
Provincial statement of objectionable items for August 1892, *III Circle*...	Routine.	5
Provincial statement of objectionable items for August 1892, *IV Circle*...	Routine.	5
Provincial statement of objectionable items for August 1892, *VI Circle.*	Routine.	4
Provincial statement of objectionable items for August 1892, *II Circle* ...	Routine.	5
Periyár project.—Disposal of tank-bed lands and of the waste lands commanded by the —	Routine.	8
Provincial statement of objectionable items, No. I Periyár division, for 31st August 1892	Routine.	7
Provincial statement of objectionable items, &c., II Circle	Routine.	2
Q		
R		
Rushikulya project.—Estimate for a bridge, Mahánadi canal — ...	Regular.	1
Rushikulya project.—Estimates for bridges, Mahánadi canal	Regular.	1
Rushikulya project.—Additional allotment for expenditure on the — during 1892–93	Routine.	2

	—	Page.
Rushikulya project.—Expenditure on works entered in the completion statement for June 1892	Regular.	5
Rent.—Grant of a monthly — of Rs. 10 for the building engaged for office by the Special Deputy Collector at Aska	Routine.	6
Rushikulya Project.—Additional allotment for the —	Regular.	4
S		
Sketch-maps required for Mr. R. B. Buckley's book on Irrigation Works of India	Regular.	1
Six months' estimates.—Statements showing the —, Irrigation Branch, for 1892–93	Regular.	1
Screw-gearing.—Maintenance of — to irrigation sluices of tanks ...	Regular.	2
Statement of irrigation and rainfall for 1891–92	Regular.	3
Statement of probable Provincial receipts and expenditure under 43. Minor Works and Navigation for 1893–94	Routine.	2
Six months' estimate for 1892–93, Irrigation Branch	Routine.	2
Suit instituted by the ryots of Patraperumbodur against the Executive Engineer, Chingleput division	Routine.	2
Samulcotta and junction canals.—Breaches in the —	Routine.	6
Samulcotta, Ellore and Venkiah canals.—Breaches in the —	Routine.	6
Statement of unauthorized appropriations for October 1892	Routine.	7
Suit.—Result of the — on the file of High Court in connection with the Nizampatam branch channel	Routine.	8
T		
Tank Restoration Works.—Handing back to the Revenue Department of "Minor" works as completed	Regular.	2
Tools and plant.—Estimate for the Locomotive engines, &c., for the use of the Kistna Western division	Regular.	4
U		
Uppar odai dam.—Estimate for a jib crane to lift falling shutters of —, Korampallam tank	Regular.	6
Unanswered references.—List of Proceedings addressed to Government and not replied to for quarter ending 30th September 1892, Board's office	Routine.	7
V		
Vembakottai-Periyakulam tank.—Estimate for improving the — ...	Regular.	3

	—	Page.
W		
Water-power at Commamur and Duggirala locks.—Lease of —, Kistna district	Regular.	6
Waste lands under the Periyár Project.—Disposal of —	Routine.	1
Water-supply to Ramayamipur, Hyderabad Territory	Routine.	6
X		
Y		
Z		

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

TABLE OF CONTENTS,

IRRIGATION,

FOR THE MONTH OF NOVEMBER 1892.

1 Subjects.	2 Numbers and Dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Dates of previous Proceedings.
	1892.		
Funds.—Certain transfers of — proposed by the Superintending Engineer, I Circle, sanctioned	1st Nov., No. 888 I.	...	......
Funds.—Passing orders on certain modifications of allotments proposed by the Superintending Engineer, VI Circle.	1st Nov., No. 889 I.	...	......
Rushikulya project—Bridge.—Estimate of Rs. 1,720 for constructing — No. 4 at $12\frac{7}{8}$ miles of the Mahanadi canal, sanctioned.	2nd Nov., No. 892 I.	...	......
Rushikulya project — Bridges. — Estimates amounting respectively to Rs. 1,630 and Rs. 1,660 for constructing — Nos. 1 and 2 at $3\frac{17}{32}$ miles and 50 feet and at $9\frac{1}{8}$ miles of the Mahanadi canal, sanctioned.	2nd Nov., No. 893 I.	...	......
Sketch maps.—Ordered that copies of — of certain systems of irrigation required for Mr. R. B. Buckley's book on irrigation works of India be forwarded to the Secretary, Public Works Department, India office, London, and that a copy of these Proceedings be sent to the Government of India.	3rd Nov., No. 894 I.	...	......
Forwarded accordingly to the Government of India.	3rd Nov., No. 895 I.	...	......
Forwarded to the Secretary, Public Works Department, India Office, London.	3rd Nov, No. 896 I.	...	......
Six months' estimates.—Statements showing the — of receipts and expenditure in the Irrigation Branch for 1892–93 and the rough estimate for 1893–94, ordered to be forwarded to the Government of India.	3rd Nov., No. 899 I.	...	......

1 Subjects.	2 Numbers and Dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Dates of previous Proceedings.
Forwarded accordingly	1892. 3rd Nov., No. 900 I.	...	......
Kondigai channel, Madura taluk.—Orders on correspondence in connection with the refund by the Collector of certain outlay incurred by Mr. Fischer in repairing the — without reference to the Public Works Department.	4th Nov., No. 905 I.	...	......
Screw-gearing.—Issuing orders regarding the maintenance of the — to irrigation sluices of tanks.	8th Nov., No. 926 I.	...	......
Irrigation and navigation works.—Ordered that the statements of financial results of — for 1891–92 be forwarded to the Government of India.	8th Nov., No. 927 I.	...	......
Forwarded accordingly	8th Nov., No. 928 I.	...	......
Pullagacherry anicut.—Ordered that the payment of percentage for establishment and tools and plant charges be not enforced in the case of the work "registering depth of water at the —, South Arcot division."	8th Nov., No. 929 I.	...	21st Sept. 1892, No. 793 I.
Godávari left embankment.—Excess outlay incurred on raising the — from Rajahmundry to Purushotapatnam, ordered to be passed.	8th Nov., No. 930 I.	...	18th July 1890, No. 394 I.
Tank restoration works.—Passing orders in regard to "minor" works being handed back to the Revenue Department immediately on completion of the restoration work.	10th Nov., No. 932 I.	...	20th April 1889, No. 197 I. 8th Oct. 1891, No. 836 I.
Floating plant.—Estimate of the cost of maintaining the — of the Buckingham canal for 1893–94, approved.	11th Nov., No. 937 I.	...	21st Nov. 1891, No. 898 I.
Pennar right flood embankment.—Estimate of Rs. 4,820 for compensation for land taken up for the — from anicut to sea, Nellore Division, sanctioned.	11th Nov., No. 938 I.	...	......
Irrigation works in Patukota taluk.—Passing orders regarding the restoration of —, Tanjore district.	12th Nov., No. 944 I.	...	......
Godávari system of canals.—Statements showing navigation receipts and charges of the — for 1891–92, recorded.	14th Nov., No. 947 I.	...	1st Nov. 1889, No. 534 I. 11th Dec. 1891, No. 947 I.
Funds.—Certain transfers of — proposed by the Chief Engineer for Irrigation for the Godávari Eastern division, sanctioned.	14th Nov., No. 948 I.	...	29th Oct. 1891, No. 2892 W. 19th Jan. 1892, No. 54 I. 14th Oct. 1892, No. 846 I.

1 Subjects.	2 Numbers and Dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Dates of previous Proceedings.
Vembakottai-Periyakulam tank.—Estimate of Rs. 8,040 for improving the — in the Tinnevelly division, sanctioned.	1892. 14th Nov., No. 949 I.	...	18th Dec. 1890, No. 764 I.
Periyár project—Grant.—Statement showing redistribution of the — for the No. I Periyár division, for 1892–93, as altered by the Chief Engineer, Public Works Department, approved.	16th Nov., No. 960 I.	...	5th Oct. 1892, No. 822 I.
Periyár project—Excess outlay.—The Examiner, Public Works Accounts, authorized to pass the — of Rs. 3,726 incurred on certain works in No. II Periyár division.	16th Nov., No. 961 I.	...	8th Oct 1887, No. 607 I. 22nd Oct. 1887, No. 656 I. 23rd Jan. 1888, No. 4950 I. 23rd Jan. 1888, No. 51 I. 23rd Jan. 1888, No. 52 I. 22nd April 1890, No. 242 I. 2nd Dec. 1890, No. 706 I.
Godávari delta.—Telegram to the Superintending Engineer, I Circle, sanctioning Rs. 5,000 required for repairing damages to works in the — caused by recent cyclone.	17th Nov., No. 964 I.	...	......
Godávari delta works.—Revised schedule of the — which remained to be carried out on 1st April 1890 under 49. Capital Expenditure not charged to Revenue, approved, and a copy of these Proceedings ordered to be forwarded to the Government of India for sanction.	18th Nov., No. 965 I.	...	19th Mar. 1891, No. 268 I. 20th May 1891, No. 429 I. 3rd Oct. 1891, No. 761 I. 11th Feb. 1892, No. 134 I. 15th Feb. 1892, No. 148 I. 24th Mar. 1892, No. 305 I. 31st Oct. 1892, No. 886 I.
Forwarded accordingly	18th Nov., No. 966 I.	...	......
Statement of irrigation and rainfall.—The — for 1891–92 ordered to be forwarded to the Government of India.	18th Nov., No. 968 I.	...	2rd Nov. 1891, No. 904 I.
Forwarded accordingly	18th Nov., No. 969 I.	...	......

1 Subjects.	2 Numbers and dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Dates of previous Proceedings.
Periyár project—Stone crushers.—Estimate of Rs. 18,000 for purchasing two — and two 10 horse power portable engines for use of No. I Periyár division, sanctioned.	1892. 19th Nov., No. 974 I.	...	2nd July 1886, No. 1679 W.
Rushikulya project.—Letter from the Government of India confirming the sanction accorded by telegram to an additional allotment of Rs. 57,400 for expenditure on the — during 1892–93, communicated to the officers concerned.	19th Nov., No. 975 I.	...	19th Sept. 1892, No. 791 I. 7th Nov. 1892, No. $\frac{909}{A}$ I.
Head sluice.—The inhabitants of Periyapolliam, Chingleput district, informed that the — asked for will be built, but the clearance of the channel of silt and its banks of prickly-pear growth will devolve on themselves.	21st Nov., No. 979 I.	...	......
Tools and plant.—Estimate of Rs. 20,000 for the Locomotive Engines, Waggons and tramway lines required for the use of the Kistna Western division, sanctioned.	21st Nov., No. 980 I.	...	26th Aug. 1892, No. 669 I.
Anicut across the Rushikulya river.—Report on the proposed scheme of constructing an — near the village of Tippalapotra in the Surada division, Ganjam district, communicated, with remarks, to the Revenue Department.	21st Nov., No. 981 I.	...	......
Perangeri channel.—Estimate of Rs. 3,600 for improvement to the — in the Tinnevelly division, sanctioned.	21st Nov., No. 982 I.	...	......
Coleroon river bank.—Estimate of Rs. 4,700 for closing breaches in the —, South Arcot division, sanctioned.	21st Nov., No. 983 I.	...	......
Patha Cuddapah tank supply channel.—Telegram to the Superintending Engineer, III Circle, directing that the — work be proceeded with to a limit of Rs. 20,000 for current year.	21st Nov., No. 984 I.	...	23rd Mar. 1892, No. 303 I. 23rd May 1892, No. 484 I. 25th Aug. 1892, No. 249 D. 16th Sep. 1892, No. 782 I. 26th Oct. 1892, No. 876 I.
Markapur tank.—Estimates aggregating Rs. 11,700 for works in connection with the — in the Kurnool division, sanctioned with remarks.	22nd Nov., No. 985 I.	...	6th Aug. 1891, No. 613 I. 10th Nov. 1891, No. 872 I.
Kistna river right flood bank.—Report of the occurrence of a breach in the — below Penumudi, recorded with remarks.	22nd Nov., No. 986 I.	...	......

1 Subjects.	2 Numbers and Dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Dates of previous Proceedings.
Rushikulya project—Expenditure.—The Examiner, Public Works Accounts, authorized to pass the — incurred on the works entered in the completion statement for June 1892, Rushikulya division.	1892. 22nd Nov., No. 987 I.	...	4th Sept. 1890, No. 482 I.
Funds.—Certain modifications of allotments proposed for works in No. II Periyár division, sanctioned	25th Nov., No. 997 I.	...	......
Periyár project.—Progress report of works in No. II Periyár division, for October 1892, recorded and ordered to be forwarded to the Government of India.	28th Nov., No. 998 I.	...	17th Mar. 1891, Nos. 262–3 I. 28th Mar. 1891, No. 1732 C. 17th Nov. 1891, No. 5114 C. 13th Sept. 1892, No. 373 D. 23rd Sept. 1892, No. 441 D. 22ndOct. 1892, Nos. 864–5 I. 27th Oct. 1892, No. 606 D. 22nd Nov. 1892, No. 4881 C.
Forwarded accordingly	28th Nov., No. 999 I.	...	......
Periyár project.—Progress report of works in No I Periyár division, for September 1892, recorded, with remarks, and ordered to be forwarded to the Government of India.	28th Nov., No. 1000 I.	...	......
Forwarded accordingly	28th Nov., No. 1001 I.	...	......
Kurnool-Cuddaph canal telegraph lines.—Letter from the Government of India on the subject of closing the account of the Telegraph Department in connection with the —, communicated to the officers concerned, and the Government of India to be requested to sanction an additional grant of Rs 35,000 to meet the charge to the same for 1892–93.	28th Nov., No. 1002 I.	...	15th May 1889, No. 236 I. 20th Nov. 1889, No. 571 I. 20th Jan. 1890, No. 34 I. 20th Jan. 1890, No. 33 I. 7th Mar. 1890, No. 148 I. 16th April 1890, Nos. 234 I. 5th July 1892, No. 585–6 I. 3rd Sept. 1892, No. 755 I.
Requested accordingly	28th Nov., No. 1003 I.	...	......

1 Subjects	2 Numbers and Dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Date of previous Proceedings.
Kistna delta system—Bridge.—Estimate of Rs. 11,600 for a rolled iron girder — at 16 miles 41 chains of the Tungabhadra drain near Ponnur, sanctioned.	1892. 28th Nov., No. 1004 I.	...	1st Oct. 1888, No. 577 I. 9th May 1892, No. 447 I.
Kistna delta system—Bridge.—Estimate of Rs. 7,200 for constructing a rolled iron girder — to carry the Buntumilli-Gudiváda road over the Pedalanka drain, sanctioned with remarks.	28th Nov., No. 1005 I.	...	5th Feb. 1884, No. 128 I. 25th May 1892, No. 493 I. 18th June 1892, No. 546 I.
Periyár project.—Progress report of works in No. I Periyár division, for October 1892, together with a note thereon by the Chief Engineer, Public Works Department, recorded and ordered to be forwarded to the Government of India.	29th Nov., No. 1007 I.	...	1st Sept. 1892, No. 750–1 I. 14th Sept. 1892, No. 777 I. 8th Oct. 1992, Nos. 832–3 I.
Forwarded accordingly	29th Nov., No. 1008 I.	...	......
Uppar odai dam.—Estimate of Rs. 3,850 for providing jib crane to lift falling shutters of —, Korampallam tank, Srivaikuntham anicut system, in the Tinnevelly division, sanctioned.	30th Nov., No. 1012 I.	...	6th Apl. 1886, No. 307 I.
Floating plant, Kistna delta.—Estimate for maintaining the —, for 1893–94, approved.	30th Nov., No. 1013 I.	...	13th Oct. 1891, No. 787 I.
Chuttrapatty anicut.—Estimate of Rs. 3,500 for constructing a head-sluice and extending the — across the Suruliyár in the Madura division, sanctioned.	30th Nov., No. 1014 I.	...	27th Nov. 1890, No. 695 I. 10th Apl. 1891, No. 324 I. 8th Oct 1891, No. 779 I. 9th Jan. 1891, No. 26 I. 22nd Apl 1892, No 400 I. 3rd Aug. 1892, No. 100 D. 16th Aug 1892, No 192 D. 5th Oct. 1892, No. 822 I.
Water power at Commamur and Duggirala locks.—Recommendations of the Chief Engineer for Irrigation regarding certain concessions asked for by Messrs. J. Adinaraya Brothers in connection with the lease of —, Kistna district, approved.	30th Nov., No. 1015 I.	...	1st Aug. 1892, No. 659 I.

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT,

FOR THE MONTH OF NOVEMBER 1892.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 12th October 1892, No. 406 Gl.

I have the honour to request that you will be so good as to obtain sanction of Government to the undermentioned transfers of allotments for the current year, proposed by the Executive Engineers of the divisions concerned :—

(1) *Godávari Eastern Division.*

From 42. Major Works—Working Expenses.	RS.	*To* 42. Major Works—Working Expenses.	RS.
1 Extensions and improvements, minor.	1,000	1-B. Maintenance and repairs ...	1,000
Tools and plant	4,980	Do. do.	4,000
		Establishment at 23 per cent. on Rs. 4,000	920
		Tools and plant at 1½ per cent. ...	60
Total ...	5,980	Total ..	5,980

(2) *Vizagapatam Division.*

43. Minor Works and Navigation. Irrigation and Navigation Works for which neither Capital nor Revenne Accounts are kept. Minor Original Works.	RS.	43. Minor Works and Navigation. Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.	RS.
Lump sum	2,000	Tank Restoration Scheme, Minor Original Works	500
		Tank Restoration Scheme, Repairs ...	500
		Pedda Uppalam tank, Tank Restoration Scheme, Major Original Works.	1,000
Total ...	2,000	Total ...	2,000

2. The Executive Engineer, Godávari Eastern Division, explains that the sum, consequent on the transfer now applied for, is required in addition to the allotment of Rs. 6,000 included in the statement of modifications submitted with my letter No. 359 Gl., dated 25th ultimo, and is absolutely necessary to meet the liabilities already incurred by the Delta Sub-Divisional officer in dredging lock channels, &c., for which bills have, it appears, already been received remaining unsettled. The Delta Sub-Divisional officer has, however, been called for an explanation for carrying out the repairs without permission in excess of the allotment placed at his disposal and it will be dealt with in due course.

3. As regards Vizagapatam division, the Executive Engineer proposes to supplement the existing Tank Restoration Scheme grant by Rs. 2,000 to enable him to carry out some of the important minor original works, &c., estimated for by Tank Restoration Scheme party in general, and for Pedda Uppalam tank. In proposing

the transfer of Rs. 1,000 for the latter, the Executive Engineer points out that it is most desirable that an extra application of *Rs. 4,000* may be made on account of Pedda Uppalam tank which stands in urgent need of restoration. If funds can be spared from savings in divisions of other circles, I would suggest the advisability of your giving due consideration to the Executive Engineer's proposal and transferring Rs. 3,000 * to Vizagapatam division.

	RS.
Now proposed to be transferred from ordinary grant	1,000
* Transfer from other divisions ...	3,000
Total ..	4,000

4. The estimates for Pedda Uppalam tank, &c., for Rs. 10,120 was sanctioned in Tank Restoration Scheme memorandum No. 181 I. of 2nd February 1892.

Order—dated 1st November 1892, No. 888 I., Public Works.

The following transfers of funds are sanctioned :—

42. Major Works—Working Expenses.
Godávari Eastern Division.

From	RS.	To	RS.
Minor extensions and improvements ..	1,000	Maintenance and repairs	5,000
Tools and plant	4,920	Establishment	920
Total ...	5,920	Total ...	5,920

43. Minor Works and Navigation.
Vizagapatam Division.

From	RS.	To	RS.
Minor Works for which neither Capital nor Revenue Accounts are kept. Public Works Department.		Tank Restoration Works.	
		Minor Original Works	500
		Repairs	500
Minor Original Works	2,000	Pedda Uppalam tank, Major Original Works	1,000
Establishment	460	Establishment	460
Tools and plant	30	Tools and plant	30
Total ...	2,490	Total ...	2,490

2. No funds are now available to meet the balance of the demand for the Pedda Uppalam tank.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 1st.

Recd. *Encl.*

G.O., 1st Nov. 1892, No. 888 I.

NOVEMBER.

Funds

Certain transfers of — proposed by the Superintending Engineer, I Circle, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 19th October 1892, No. 672 T.N.

I have the honour to request that the following modification of allotments may be sanctioned at an early date, if possible:—

Item No.	—	Existing grant.	Modification of allotment applied for.		Modifications of allotments proposed.	
			Reduction.	Increase.	Reduction.	Increase.
	IRRIGATION.					
	43. Minor Works and Navigation.					
	Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.					
1	Repairs, No. II Periyar division	..	..	1,880	..	1,880
	Agricultural Works.					
	River Embankments.					
2	Original works, minor, Tinnevelly division ..	271	271	..	271	..
3	Repairs do. ..	4,000	..	271	..	271
		..	271	271	271	271

2. *Item* 1.—An estimate of Rs. 1,880 for thorough repairs to apron, &c., of the Peranai anicut was sanctioned by the Superintending Engineer on the 14th September 1892, but the work was not put in hand for want of funds; cement plaster is much required in many places and it is necessary that the repairs should be carried out as soon as possible. If funds are allotted the repairs can be put in hand at once.

Item 2.—It is reported that at present there are no demands under this head; hence it is proposed to transfer the grant to item 3.

Order—dated 1st November 1892, No. 889 I., Public Works.

The demand for item 1 cannot be complied with at present as funds will probably be required to meet more urgent demands.

2. The sum surrendered from item 2 is transferred to item 3, the previous grant for which was in G.O., No. 876 I., dated 26th October 1892, reduced from Rs. 4,000 to Rs. 2,000.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 1st.

Recd. *Encl.*

G.O., 1st Nov. 1892, No. 889 I.

NOVEMBER.

Funds

Passing orders on certain modifications of allotments proposed by the Superintending Engineer, VI Circle.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 9th October 1892, No. 757 G.N.

I have the honour to submit, herewith, a plan and estimate, amounting to Rs. 1,750, for the construction of a bridge No. 4 at $12\frac{4}{8}$ miles, Mahánadi canal, Rushikulya project, for your approval and sanction of Government.

2. I beg to state that a bridge at this site is not entered in the revised estimate sanctioned in Proceedings of the Madras Government No. 482 I., dated 4th September 1890, but the necessity of a bridge at this place was decided upon in your inspection notes (page 4), embodied in G.O., No. 218 I., dated 7th March 1891.

3. A report and data received from the Executive Engineer accompany the estimate.

No. 176 I.

Submitted to Government.

2. The estimate, amounting to Rs. 1,720, as reduced in this office, by substituting pile piers throughout instead of the masonry pier with a pile pier on either side as proposed by the Superintending Engineer, is recommended for sanction.

OOTACAMUND, 26th October 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 2nd November 1892, No. 892 I., Public Works.

The following estimate, amounting to Rs. 1,720, is sanctioned from the balance of the amount reserved for unforeseen works of the Rushikulya project which will then be reduced to Rs. 59,450 :—

Famine Relief and Insurance.
35. Protective Irrigation Works.
Rushikulya Project.
I. Works.
(2) Main Canals and Branches.
Mahánadi Canal.
G. Bridges.

	RS.
Constructing bridge No. 4 at $12\frac{4}{8}$ miles, estimate	1,720

2. This sanction is registered as No. 125 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with five enclosures.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
,, Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 2nd.

Recd. *Encl.*

G.O., 2nd Nov. 1892, No. 892 I.

NOVEMBER.

Rushikulya Project

Bridge.—Estimate of Rs. 1,720 for constructing — No. 4 at $12\frac{7}{8}$ miles on the Mahánadi canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Superintending Engineer, I Circle, dated 2nd July 1892, No. 403 G.N.
To „ „ „ „ „ 23rd „ „ „ I/66 „

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 26th September 1892, No. 713 G.N.

With reference to your memo. No. I/66 G.N., dated 23rd July 1892, I have the honour to forward plan and estimate for bridge No. 1 at 3 $\frac{17}{32}$ miles + 50 feet on the Mahánadi canal revised in accordance with your instructions.

2. I forwarded the former design with 30 running feet of waterway, as I did not consider the velocity (2·75 feet per second) excessive on a non-navigable canal.

From the Superintending Engineer, I Circle, dated 21st June 1892, No. 353 G.N.
To „ „ „ „ „ 29th „ „ „ I/56 „

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 4th October 1892, No. 738 G.N.

With reference to your memo. No. I/56 G.N., dated 29th June 1892, I have the honour to submit a fresh plan and an estimate, amounting to Rs. 1,700, for constructing bridge No. 2 at 9$\frac{1}{8}$ miles of Mahánadi canal, Rushikulya project, duly prepared in accordance with your instructions, and to request that sanction may be obtained to the same.

2. A lump sum of Rs. 3,200 is provided for this work in the sanctioned estimate of the project in G.O., No. 482 I., dated 4th September 1890.

No. 175 I.

Submitted to Government.

2. The plans and estimates for constructing bridges Nos. 1 and 2 at 3 $\frac{17}{32}$ miles and 50 feet and 9$\frac{1}{8}$ miles, respectively, on the Mahánadi canal, Rushikulya project, submitted by the Superintending Engineer, have been slightly altered in this office, pile piers being substituted throughout for the proposed arrangement of one masonry pier and two pile piers. The alteration has resulted in a saving of Rs. 40 in each case and the reduced estimates for Rs. 1,630 and Rs. 1,660 are recommended for sanction.

OOTACAMUND, (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
24th October 1892. Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 2nd November 1892, No. 893 I., Public Works.

The following estimates, amounting to Rs. 1,630 and Rs. 1,660, are sanctioned in lieu of the provision of Rs. 3,200 made in each case for these works in the revised estimate for the Rushikulya project printed in Proceedings of the Madras Government No. 482 I., dated 4th September 1890, the total saving of Rs. 3,110 effected by the present estimates being added to the balance of the amount reserved for unforeseen works, which will then be increased to Rs. 62,560 :—

Famine Relief and Insurance.
35. Protective Irrigation Works.
Rushikulya Project.
I. Works.
(2) Main Canals and Branches.
Mahánadi Canal.
G. Bridges.

		RS.
1.	Constructing bridge No. 1 at 3 $\frac{17}{32}$ miles 50 feet, estimate ...	1,630
2.	„ „ No. 2 at $9\frac{1}{8}$ „ estimate	1,660

2. These sanctions are registered as Nos. 126 I. and 127 I. of 1892-93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with ten enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 2nd.

Recd. *Encl.*

G.O., 2nd Nov. 1892, No. 893 I.

NOVEMBER.

Rushikulya Project

Bridges.—Estimates, amounting, respectively, to Rs. 1,630 and Rs. 1,660, for constructing — Nos. 1 and 2 at 3 $\frac{17}{32}$ miles and 50 feet and at 9 $\frac{1}{8}$ miles on the Máhánadi canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From C. VINCENT, Esq., Under-Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 5th July 1892, No. 160 I.

I am directed to request that, with the permission of His Excellency the Governor in Council, the Secretary in the Public Works Department, India Office, London, may be furnished direct, with as little delay as practicable, with 510 copies each of the following maps which are published annually in the Administration Report of Irrigation Works in the Madras Presidency, with the intimation that they are intended for the book on Irrigation Works of India which is under compilation and publication in England by Mr. R. B. Buckley :—

(1) Sketch-map of Rushikulya project.
(2) „ of Periyár project.
(3) „ of Barúr tank project.
(4) „ of Godávari delta.
(5) „ of Cauvery „

2. The maps are printed in colours, but in one or two cases it is believed that some coloring is done by hand. The hand-coloring is *not* required on the 510 copies in question, but only the machine work.

3. I am to request that intimation may be sent to the Government of India when the requisition has been complied with.

ORDER—dated 3rd November 1892, No. 894 I., Public Works.

Ordered that the following letter be sent to the Secretary, Public Works Department, India Office, London.

2. Ordered also that a copy of these Proceedings be forwarded to the Government of India for information.

(Here enter Nos. 895–96 I., Public Works, dated 3rd November 1892.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.

ENDORSEMENT—dated 3rd November 1892, No. 895 I., Public Works.

Forwarded accordingly.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 3rd.

Recd. *Encl.*

G.O., 3rd Nov. 1892, Nos. 894, 895 I.

NOVEMBER.

Sketch Maps

Forwarding copy of Proceedings regarding despatch to the Secretary, Public Works Department, India Office, London, of copies of — of certain irrigation systems required for Mr. R. B. Buckley's book on Irrigation Works of India.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Letter—from

Lt.-Col. R. R. E. DRAKE-BROCKMAN, R.E.,
Ag. Joint Secretary to the Government of Madras,
Public Works Department,
Irrigation Branch,

To

The SECRETARY in the PUBLIC WORKS DEPARTMENT,
India Office, London.

Sir,

In compliance with a request made by the Government of India in its letter, P.W.D. No. 160 I., dated 5th July 1892, I am directed to forward, herewith, 510 copies each of the sketch maps of the following systems, which are, it is understood, required for Mr. R. B. Buckley's book on Irrigation Works of India now under compilation and publication in England :—

(1) Rushikulya project.
(2) Periyár project.
(3) Barúr tank project.
(4) Godávari delta system.
(5) Cauvery ,,

I have the honour to be,
Sir,
Your most obedient servant,

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

Ootacamund,
3rd November 1892.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 3rd.

Recd. *Encl.*

3rd November 1892, No. 896 I.

NOVEMBER.

Sketch Maps

Forwarding copies of — of certain irrigation systems required for Mr. R. B. Buckley's book on Irrigation Works of India.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

Office-note to the Examiner, Public Works Accounts, dated 18th October 1892, No. 313.
" from the " " " " " 22nd " " " 1477 C.

No. 179 I.

Note by the Chief Engineer for Irrigation.

With his office-note No. 1477 C., dated 22nd October 1892, the Examiner of Public Works Accounts has forwarded estimates of revenue and expenditure in the Irrigation Branch for the current year based on the actuals for the first five months of the year and on the average of the preceding years for the remaining months.

2. He suggests that the estimate of direct receipts from Major Works be fixed at Rs. 2,90,000, the actuals for 1891–92 being Rs. 2,85,513. The extensive use of water from the Kurnool-Cuddapah canal owing to scanty rainfall increased the receipts in 1891–92. This year the season being favorable, the canal water cannot be expected to be used to so large an extent. The estimate may, therefore, be fixed at Rs. 2,70,000.

3. The budget estimate of direct receipts from Minor Works and Navigation, viz., Rs. 1,50,000, need not be altered.

4. The estimate of expenditure under 35. Protective Works, Irrigation, does not include the additional grant of Rs. 61,500 lately applied for as the Government of India has not yet sanctioned the amount.

5. Under 42. Major Works (Working Expenses) it is not found possible to proceed with minor extensions and improvements to the Cauvery delta as rapidly as was intended, but the amount not required for expenditure on that delta is reserved to meet probable demands for additional grants for the Godávari and Kistna deltas.

6. Superintending Engineers have already been requested to regulate expenditure under 43. Minor Works and Navigation to avoid excess over the existing grants.

7. The estimate under 49. Capital Expenditure not charged to Revenue includes Rs. 1,77,800, the additional grant which the Government of India lately sanctioned for the Periyár project.

8. The estimates for the ensuing official year have not yet been fixed and the amounts entered in the statement prepared in this office are rough approximations based on the amounts applied for by Superintending Engineers.

OOTACAMUND, 28th October 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

SIX months' estimate for the year 1892–93 (Irrigation Branch).

Table I.

Particulars.	ACTUALS, 1891-92.				BUDGET ESTIMATE, 1892-93.			
	Imperial.	Provincial.	Local.	Total.	Imperial.	Provincial.	Local.	Total.
1	2	3	4	5	6	7	8	9
Revenue.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
XXIX. Major works—								
Direct receipts ..	2,85,513	..	..	2,85,513	2,57,000	..	..	2,57,000
Portion of land revenue due to irrigation ..	47,18,751	..	..	47,18,751	50,03,000	..	..	50,03,000
XXX. Minor works and navigation.	..	1,60,632	..	1,60,632	..	1,50,000	..	1,50,000
Expenditure.								
35. Construction of protective irrigation works	6,40,465	..	..	6,40,465	4,50,000	..	..	4,50,000
42. Major works—								
Working expenses	11,75,888	..	..	11,75,888	11,96,000	..	..	11,96,000
Interest on debt	21,31,096	..	..	21,31,096	..	..	..	..
43. Minor works and navigation ..	..	39,98,997	23,438	40,22,435	..	31,50,000	31,000	31,81,000
49. Irrigation works—								
Capital expenditure not charged to revenue ..	16,17,952	..	..	16,17,952	13,00,000	..	..	13,00,000

Particulars.	SIX MONTHS' ESTIMATE, 1892-93.				PROBABLE ESTIMATE, 1893-94.			
	Imperial.	Provincial.	Local.	Total.	Imperial.	Provincial.	Local.	Total.
	10	11	12	13	14	15	16	17
Revenue.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
XXIX. Major works—								
Direct receipts ..	2,70,000	..	..	2,70,000	2,60,000	..	..	2,60,000
Portion of land revenue due to irrigation ..	50,03,000	..	..	50,03,000	50,03,000	..	..	50,03,000
XXX. Minor works and navigation.	..	1,50,000	..	1,50,000	..	1,50,000	..	1,50,000
Expenditure.								
35. Construction of protective irrigation works	4,50,000	..	..	4,50,000	4,50,000	..	..	4,50,000
42. Major works—								
Working expenses	11,96,000	..	..	11,96,000	12,07,000	..	..	12,07,000
Interest on debt	21,83,009	..	..	21,83,009	22,57,468	..	..	22,57,468
43. Minor works and navigation ..	..	31,50,000	21,877	31,71,877	..	38,00,000	28,000	38,28,000
49. Irrigation works—								
Capital expenditure not charged to revenue ..	14,77,800	..	..	14,77,800	17,45,000	..	..	17,45,000

Table II.

Particulars.	Actuals, 1891-92.	Budget estimate, 1892-93.	Six months' estimate, 1892-93.	Budget estimate, 1893-94.
Capital Expenditure not charged to Revenue—	RS.	RS.	RS.	RS.
In India—				
Godávari delta system	66,551	..	5,009	..
Kistna do.	4,28,902	4,23,000	3,64,377	4,72,000
Pennér anicut system	621	..	69	..
Sangam do.	16,486	36,000	35,931	54,000
Barúr tank	3,495	..	3,614	..
Periyár project	11,02,481	8,41,000	10,68,800	10,69,000
Kurnool-Cuddapah canal	— 581	..	..	..
Cauvery delta	— 3	..	..	..
Kalingaroyan channel	..	..	..	1,50,000
Total ..	16,17,952	13,00,000	14,77,800	17,45,000

Table II—cont.

Particulars.	Actuals, 1891–92.	Budget estimate, 1892–93.	Six months' estimate, 1892–93.	Budget estimate, 1893–94.
Capital Expe nditure not charged to Revenue—*cont.*	RS.	RS.	RS.	RS.
In England—				
Godávari delta system	..	..	..	..
Kistna do.	..	..	..	..
Pennér anicut	..	..	..	..
Sangam	..	..	..	..
Barúr tank	..	..	..	..
Periyár project	..	..	..	..
Kurnool-Cuddapah canal	..	..	..	..
Cauvery delta	..	..	..	..
Total	..	..	..	..
Interest payable by Provincial Government to the Imperial treasury—				
Godávari delta system	4,35,044	..	4,36,475	4,36,575
Kistna do.	3,80,928	..	3,96,793	4,13,521
Pennér anicut	65,302	..	65,316	65,319
Sangam do.	1,19,525	..	1,20,573	1,22,372
Kurnool-Cuddapah canal	8,65,641	..	8,65,629	8,65,629
Barúr tank	15,679	..	15,821	15,894
Cauvery delta	66,242	..	66,242	66,242
Srívaikuntham anicut	54,041	..	54,041	54,041
Periyár project	1,28,694	..	1,72,119	2,14,875
Kalingaroyan channel	..	..	..	3,000
Total	21,31,096	..	21,83,009	22,57,468

OOTACAMUND,
28th October 1892.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Chief Engineer for Irrigation.

ORDER—dated 3rd November 1892, No. 899 I., Public Works.

The statements showing the six months' estimates of receipts and expenditure in the Irrigation Branch for 1892–93 and the rough estimate for 1893–94 will be submitted to the Government of India.

(Here enter No. 900 I., Public Works, dated 3rd November 1892.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineers.
" the Examiner, Public Works Accounts.
" the Revenue Department.

ENDORSEMENT—dated 3rd November 1892, No. 900 I., Public Works.

Forwarded accordingly.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 3rd.

Recd. *Encl.*

G.O., 3rd Nov. 1892, Nos. 899 I., 900 I.

NOVEMBER.

Six Months' Estimates

Forwarding statements showing the — of receipts and expenditure in the Irrigation Branch for 1892–93 and the rough estimate for 1893–94.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers:—

From the Superintending Engineer, VI Circle, dated 28th March 1892, No. 1365 M.D.
Memo. to „ „ VI „ „ 12th April „ „ 1972 C.
From the Executive Engineer, Madura Division „ 30th May „ „ 182 S.E.
Endorsement thereon by Suptg. Engr., VI Circle „ 10th June „ „ 231 M.D.
„ by Joint Secy. to Govt., P.W.D., Irrigation Branch, dated 24th June 1892, No. 3196 C.
Proceedings of the Board of Revenue, dated 29th August 1892, Mis. No. 5390.
Endorsement thereon by Revenue Department, dated 17th October 1892, No. 4530.

No. 177 I.

Note by the Chief Engineer for Irrigation.

From the tracing signed by Mr. Garrett, dated 1st June 1892, it would appear that the weak point in the leading portion of the channel down to the bridge on the Ramnad road is that lying between the island (Tirumuthu Pillay's garden on tracing by Mr. Grimes, dated 19th February 1887) and the main land.

2. This bank apparently is overtopped and breaches on the occurrence of every flood of any magnitude, and, to guard against this, it will be necessary to regulate the admission of water into the channel by a head sluice constructed, say, opposite the toll-gate at Kathianur village and to raise the portion of bank referred to to a safe margin, say, 3 feet above M.F.L. in the river.

3. The Superintending Engineer, VI Circle, should estimate for these works in communication with Mr. Fischer.

OOTACAMUND, 20th October 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 4th November 1892, No. 905 I., Public Works.

In the first of the papers quoted above, the Superintending Engineer, VI Circle, submitted, for the orders of Government, a claim of Rs. 280–13–6 preferred by Mr. R. Fischer as a *pro rata* contribution which the latter considered due by the Government for certain repairs carried out by him to the Kondigai channel, which irrigates the village of Kondigai belonging to Mr. Fischer as well as the Government villages of Silaiman and Puliangulam in the Madura taluk. The cause for this reference was the request made to the Superintending Engineer by the Collector of Madura, acting under the orders of the Board of Revenue, to refund this amount which had already been paid by the Collector to Mr. Fischer, as the work upon which the repairs were carried out appeared to him "to be an Imperial source of irrigation." The Superintending Engineer demurred to making this payment on the grounds that, assuming the channel to be an Imperial work, Mr. Fischer had no right to interfere with it nor to carry out any repairs to it without the previous knowledge of his department, and, further, that the work now claimed by Mr. Fischer to have been done by him to the channel had not been checked in any way by the Public Works Department.

2. As the Collector had, however, already paid away the amount claimed by Mr. Fischer in order to put an end to any further proceedings in a civil suit instituted by the latter for the recovery of this money, the debit was ordered to be accepted in the Public Works Department and the complete papers in connection with the civil suit were called for. The Board of Revenue was then called upon through the Revenue Department to explain its having sanctioned the payment of Mr. Fischer's claim without any reference to the Public Works Department.

3. In the explanation rendered by the Board of Revenue quoted above, it defends its action on the grounds of equity and of the action lately taken by the Government itself in a suit brought against the zemindar of Anaicuttoo for the recovery of a moiety of the expenditure incurred in the repair of a hissa tank; but this does not explain in any way why the Board took upon itself to sanction a payment falling on Public Works Department allotments. It may have been equitable or otherwise, but this was not the point in question. Looking to the fact that the contribution of Rupees 32-11-4 ordered to be paid in 1885 by the Public Works Department was duly reported to the Board in para. 4 of the Collector's letter No. 102, dated 8th August 1888, quoted in Board's Proceedings, No. 1702 of 1888, and that, in the Board's Proceedings now under reference, it is mentioned that, "the Collector stated that Mr. Fischer's petitions were duly transferred by the Revenue to the Public Works Department, &c.," the explanation of the Board in para. 11 of these Proceedings to the effect that "there was nothing in the correspondence from the Collector to show that the Kondigai channel was treated as an Imperial work" and that on that account they "did not consider it necessary to consult the Public Works Department" cannot be accepted.

4. As, however, the Kondigai channel supplies the Silaiman tank which is classed as "Imperial," there is no reason why it also should not be brought into the same category, and the Collector of Madura will, therefore, put himself in communication with Mr. Fischer and ascertain his views on the subject, with intent to arrive at an amicable arrangement.

5. The Government, as co-proprietor of the channel, is entitled by law to demand that the consent of the responsible officers of the Public Works Department should be previously obtained ere any steps are taken by Mr. Fischer in the repair or improvement of this channel, and the Superintending Engineer should, therefore, give that gentleman distinctly to understand that the Government will not pay for any works executed by him without the consent of the Public Works Department.

6. The proposal made in para. 12 of the Board's Proceedings under reference is disposed of in the note by the Chief Engineer for Irrigation quoted above, and the Superintending Engineer will take steps for carrying out or not, as the case may require, the instructions noted therein on being informed by the Collector of the successful or otherwise issue of his negotiations with Mr. Fischer.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
" Chief Engineer for Irrigation.
" Revenue Department.
" Examiner, Public Works Accounts.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 4th.

Recd. *Encl.*

G.O., 4th Nov. 1892, No. 905 I.

NOVEMBER.

Kondigai Channel, Madura Taluk

Orders on correspondence in connection with the refund by the Collector of certain outlay incurred by Mr. Fischer in repairing the — without reference to the Public Works Department.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

Letter from the Collector of Madura, dated 4th October 1892, No. 202.
Procs. of the Bd. of Rev. (Rev. Sett., L. Rds. and Agri.), dated 10th Oct. 1892, No. 8908.

No 181 I.

Note by the Chief Engineer for Irrigation.

Some correspondence has lately passed between the Executive Engineer, Madura division, and the Collector of Madura relative to the agency responsible for maintaining the screw-gearing that has been fitted of late years to the irrigating sluices of the more important tanks. It is palpably out of the power of the Public Works Department officers to attend to this minor particular and which is a duty clearly devolving upon the Revenue officials of each village. The Board of Revenue, in their Proceedings quoted above, recognize this, but express a doubt whether the expenditure necessary for oiling and keeping the screw-gearing in a state of efficiency ought, in the case of Imperial irrigation works, to fall upon the Minor irrigation works allotment. I consider that each head of service ought to be debited with the expenditure involved in this case, and this can easily be arranged by the departments which have the disposal of the respective allotments for the repair and maintenance of irrigation works.

OOTACAMUND, 25th Oct. 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 8th November 1892, No. 926 I., Public Works.

As it is necessary to oil and otherwise keep clean the screw-gearing fitted of late years and now being fitted to irrigation sluices of tanks, as well as to other irrigation sluices for which a special Public Works Department establishment is not maintained, His Excellency in Council directs that this duty should devolve upon the village Revenue officials, in whose jurisdiction the works may be, and that the expenditure involved thereby should, in the case of Imperial irrigation works, be met from the Public Works budget allotment, and, in the case of other works, from the grant for Minor irrigation works at the disposal of the Revenue Department.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineers.
,, the Examiner, Public Works Accounts.
,, the Revenue Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 8th.

Recd. *Encl.*

G.O., 8th Nov. 1892, No. 926 I.

NOVEMBER.

Screw-gearing

Issuing orders regarding the maintenance of the — to irrigation sluices of tanks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

Office-note from the Examiner, Public Works Accounts, dated Madras, 25th October 1892, No. 1507 C.

The statements of financial results of irrigation and navigation work for 1891–92, required for submission to the Government of India are herewith forwarded, with the figures available in this office duly filled in.

2. In order to complete table I, columns 2 and 3 and the figures for the Kurnool Canal against columns 16 to 21 require to be filled up in your office.

ENCLOSURES.

STATEMENT showing the financial results of Irrigation Works in the Madras Presidency for and up to end of 1891-92.

Table I.—Principal results of operations for the year ended 31st March 1892.

Irrigation works.	Mileage in operation. — Main canal.	Mileage in operation. — Distributaries.	Direct capital outlay during the year 1891-92 including cost of establishment and tools and plant.	Gross receipts direct and indirect from all sources.	Working expenses. — Direct.	Working expenses. — Indirect.	Working expenses. — Total.	Net revenue excluding charges for interest. — Amount.	Net revenue excluding charges for interest. — Percentage on total direct and indirect capital outlay.	Interest at 4 per cent. on direct capital outlay at commencement of year and 2 per cent. on outlay during the year.	Surplus revenue after paying interest on direct capital outlay. — Amount.	Surplus revenue after paying interest on direct capital outlay. — Percentage on total sum at charge.	Excess charges including interest on direct capital outlay. — Amount.	Excess charges including interest on direct capital outlay. — Percentage on total sum at charge.	Area of land irrigated during the year. — Due to old irrigation works.	Area of land irrigated during the year. — Due to new irrigation works.	Area of land irrigated during the year. — Total.	Gross receipts per acre irrigated due to new works.	Working expenses excluding interest per acre irrigated due to new works.	Percentage of working expenses on receipts.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	MILES.	MILES.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	ACRES.	ACRES.	ACRES.	RX.	RX.	RX.
MAJOR WORKS.																				
Irrigation Works.																				
Godávari delta system	506	1,878	6,655	2,37,543	62,865	3,255	66,120	1,71,423	13·39	43,504	1,27,919	(c)	..	..	154,241	578,123	732,364	·41	·11	27·83
Kistna do.	329	1,614	42,890	1,87,924	51,162	2,472	53,634	1,34,290	12·83	38,093	96,197	(c)	..	..	77,045	403,683	480,728	·46	·13	28·54
Cauvery do.	844	1,250	..	73,096	7,157	629	7,786	65,310	36·07	6,624	58,686	(c)	..	..	768,903	239,156	1,008,059	·31	·03	10·65
Pennér anicut system	22	120	62	386	1,802	59	1,861	— 1,475	(b)	6,530	..	..	8,005	7·2	28,824	6,828	35,652	·06	·27	482·12
Srívaikuntham anicut system ..	28	62	..	11,010	2,506	166	2,672	8,338	5·74	5,404	2,934	2·006	..	..	20,300	21,022	41,322	·52	·13	24·27
Sangam anicut system ..	9	271	1,649	931	3,612	92	3,704	— 2,773	(b)	11,953	..	..	14,726	3·53	35,069	4,500	39,569	·21	·82	397·85
Kurnool canal	190	313	— 58	14,273	12,992	453	13,445	828	·04	86,564	..	..	85,736	2·88	..	73,050	73,050	·20	·18	94·21
Barúr tank project	7	22	349	548	778	24	802	— 254	(b)	1,568	..	..	1,822	3·67	1,303	1,454	2,757	·38	·55	146·35
Periyár project (a)	..	..	1,10,248	..	..	..	..	..	..	12,869	..	..	12,869	3·19	..	..	..	..	..	..
Total ..	1,935	5,530	1,61,795	5,25,711	1,42,874	7,150	1,50,024	3,75,687	6·48	2,13,109	1,62,578	13·03	..	..	1,085,685	1,327,816	2,413,501	·39	·11	28·53
Protective Works.																				
Rushikulya project (a) ..	37	4	64,046	..	..	..	..	..	..	8,618	..	..	8,618	2·93	..	..	..	..	..	..
Total, Major Works ..	1,972	5,534	2,25,841	5,25,711	1,42,874	7,150	1,50,024	3,75,687	6·19	2,21,727	1,53,960	9·09	..	..	..	..	..	..	..	28·53
MINOR WORKS AND NAVIGATION.																				
Irrigation Works.																				
Chembrambakam tank ..	25	27	..	67	880	23	903	— 836	(b)	2,498	..	..	3,334	4·5	6,740	838	7,578	·08	1·08	1,347·76
Pálár anicut system (d) ..	28	262	3,284	131	8,837	233	9,070	— 8,939	(b)	7,402	..	..	16,341	6·23	..	..	..	..	..	6,923·66
Pelandorai anicut system (d) ..	15	48	87	11	1,618	42	1,660	— 1,649	(b)	1,638	..	..	3,287	3·38	..	..	..	..	..	15,090·9
Madras water-supply and irrigation extension project ..	10	..	..	2,000	1,390	52	1,442	558	·32	6,063	..	..	5,505	1·74	6,065	2,106	8,171	·95	·68	72·1

Lower Coleroon anicut system (d).	94	802	..	76	2,453	65	2,518	— 2,442	(b)	2,200	..	..	4,642	(c)	..	..	..	..	..	3,313·16
Shatiatope anicut system (d) ..	3	187	283	19	2,037	53	2,090	— 2,071	(b)	359	..	..	2,430	(c)	..	..	..	..	..	11,000
Vriddháchalam do. (d) ..	17	32	..	..	1,005	26	1,031	— 1,031	(b)	194	..	..	1,225	(c)	..	..	..	..	..	..
Mehmattur do. ..	7	17	..	707	1,564	40	1,604	— 897	(b)	277	..	..	1,174	14·9	542	2,095	2,637	·34	·77	226·88
Tirukoilúr do. (d) ..	57	106	1,268	38	2,479	65	2,544	— 2,506	(b)	894	..	..	3,400	15·86	..	..	..	..	..	6,694·74
Cumbum tank	..	20	..	— 372	1,053	26	1,079	— 1,451	(b)	183	..	..	1,634	(c)	5,557	386	5,943	..	2·79	..
Vellár anicut system	3	8	..	217	100	·2	102	115	1·8	249	..	..	134	1·34	3,310	777	4,087	·28	·13	47
Marudur do.	27	45	..	7,233	1,383	28	1,411	5,822	141·51	160	5,662	(c)	..	..	17,384	16,249	33,633	·44	·08	19·51
Thadapalli channel	48	28	..	2,876	1,367	26	1,393	1,483	16·58	349	1,134	(c)	..	..	10,175	4,282	14,457	·67	·33	48·43
Arkenkóta do.	20	4	..	858	186	4	190	668	6·63	388	280	1·18	..	..	2,673	1,481	4,154	·58	·13	22·14
Kalingaroyen do.	57	4	257	1,817	1,484	37	1,521	296	5·35	215	81	·301	..	..	16,741	5,014	21,755	·36	·3	83·71
Cheyár anicut system (d) ..	21	160	..	59	9,817	258	10,075	— 10,016	(b)	930	..	..	10,946	46·06	..	..	..	..	..	17,076·27
Poiney do. (d) ..	55	127	..	73	1,534	41	1,575	— 1,502	(b)	854	..	..	2,356	(c)	..	..	..	..	..	2,157·53
Total ..	487	1,877	5,179	15,810	39,187	1,021	40,208	— 24,398	(b)	24,853	..	..	49,251	(c)	..	..	..	..	..	254·32
Navigation.																				
Buckingham canal	262	..	25,820	9,827	16,743	544	17,287	— 7,460	(b)	29,465	..	..	36,925	3·16	..	..	..	..	..	175·91
Chilka lake do.	8	..	..	..	570	15	585	— 585	(b)	121	..	..	706	15·73	..	..	..	..	..	..
Ganjam-Gopálpur canal ..	..	..	560	..	6	..	6	— 6	(b)	560	..	..	566	3·31	..	..	..	..	..	..
Vedarniem canal	34½	..	..	123	370	11	381	— 258	(b)	..	..	..	258	22·65	..	..	..	..	..	309·76
Total ..	304½	..	26,380	9,950	17,689	570	18,259	— 8,309	(b)	30,146	..	..	38,455	3·23	..	..	..	..	..	183·507
Total, Minor Works and Navigation.. ..	791½	1,877	31,559	25,760	56,876	1,591	58,467	— 32,707	(b)	54,999	..	..	87,706	7·45	..	..	..	..	..	226·97

(a) These projects are under construction.
(b) No percentages have been shown here as the net revenue in column 9 is *minus*.
(c) No percentages have been shown here, the total sum at charge in column 9 of table II being *minus*.
(d) In the case of these projects the Board of Revenue have not furnished information regarding indirect revenue, and the area of land irrigated; hence the totals in columns 16 to 20 have been left blank.

(Signed) I. S. SHERLOCK-HUBBARD,
Examiner, Public Works Accounts.

MADRAS,
25th October 1892.

Table II.—General financial results of the several undertakings to 31st March 1892.

Irrigation works.	Estimated cost of construction (exclusive of all indirect charges).	Date of completion of work.	Capital outlay. Direct charges. To end of previous year.	Capital outlay. Direct charges. To end of year.	Capital outlay. Indirect charges. To end of year	Capital outlay. Total capital outlay both direct and indirect to end of year.	Excess of interest over net revenue in past years.	Total sum at charge at end of 1891–92.	Interest at 4 per cent. on total sum at charge at end of 1891–92.	Surplus for the year of net revenue over interest on total sum of charge.	Excess for the year of interest on total sum at charge over net revenue.	Capitalized value at 4 per cent. of net revenue (excluding charges for interest).	Surplus sum to credit in excess of total sums at charge.	Excess sum at charge over capitalized value of net revenue.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	RX.		RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
MAJOR WORKS.														
Irrigation Works.														
Godávari delta system	10,93,433	1846–47	10,84,282	10,90,937	1,89,122	12,80,059	-24,52,570	-11,72,511	- 46,900	2,18,323	..	42,85,575	54,58,086	..
Kistna do.	13,91,978	1855–56	9,30,874	9,73,764	72,965	10,46,729	-11,51,989	- 1,05,260	- 4,210	1,38,500	..	33,57,250	34,62,510	..
Cauvery do.	1,66,293	1836–37	1,65,606	1,65,606	12,339	1,77,945	-17,57,220	-15,79,275	- 63,171	1,28,481	..	16,32,750	32,12,025	..
Pennér anicut system	1,63,376	1860–61	1,63,225	1,63,287	24,875	1,88,162	- 75,690	1,12,472	4,499	..	5,974	- 36,875	..	1,49,347
Srívaikuntham anicut system	1,36,152	1870–71	1,35,103	1,35,103	10,052	1,45,155	1,110	1,46,265	5,850	2,488	..	2,08,450	62,185	..
Sangam anicut system	3,06,500	1884–85	2,97,987	2,99,636	67,677	3,67,313	50,059	4,17,372	16,695	..	19,468	- 69,325	..	4,86,697
Kurnool canal	..	1882–83	21,64,131	21,64,073	..	21,64,073	8,12,010	29,76,083	1,19,043	..	1,18,215	20,700	..	29,55,383
Barúr tank project	40,039	1887	39,023	39,372	2,199	41,571	8,045	49,616	1,985	..	2,239	- 6,350	..	55,966
Periyár project	5,42,500	..	2,66,610	3,76,858	9,651	3,86,509	16,296	4,02,805	16,112	..	16,112	..	..	4,02,805
Total ..	38,40,271	..	52,46,841	54,08,636	3,88,880	57,97,516	-45,49,949	12,47,567	49,903	3,25,784	..	93,92,175	81,44,608	..
Protective Works.														
Rushikulya project	3,94,000	..	1,83,427	2,47,473	26,246	2,73,719	20,828	2,94,547	11,782	..	11,782	..	..	2,94,547
Total, Major Works ..	42,34,271	..	54,30,268	56,56,109	4,15,126	60,71,235	-45,29,121	15,42,114	61,685	3,14,002	..	93,92,175	78,50,061	..
MINOR WORKS AND NAVIGATION.														
Irrigation Works.														
Chembrambakam tank	65,531	1870–71	62,443	62,443	11,216	73,659	487	74,146	2,966	..	3,802	- 20,900	..	95,046
Pálár anicut system	1,98,375	1853–54	1,83,412	1,86,696	9,660	1,96,356	66,133	2,62,489	10,499	..	19,438	- 2,23,475	..	4,85,964
Pelandorai do.	41,620	1875–76	40,898	40,985	4,148	45,133	51,989	97,122	3,885	..	5,534	- 41,225	..	1,38,347
Madras water-supply and irrigation extension project	1,58,100	1870–71	1,51,583	1,51,583	23,822	1,75,405	1,40,086	3,15,491	12,620	..	12,062	13,950	..	3,01,541
* Lower Coleroon anicut system.. ..	55,000	848–49	55,000	55,000	1,440	56,440	- 6,81,476	- 6,25,036	- 25,001	22,559	..	- 61,050	5,63,986	..
* Shatiatope do.	9,125	1847–48	8,842	9,125	239	9,364	- 1,43,170	- 1,33,806	- 5,352	3,281	..	- 51,775	82,031	..
* Vriddháchalam do.	4,847	1868–69	4,847	4,847	127	4,974	- 9,081	- 4,107	- 164	..	867	- 25,775	..	21,668
* Mehmattur do.	6,923	1872–73	6,923	6,923	181	7,105	775	7,880	315	..	1,212	- 22,425	..	30,305
* Tirukoilúr do.	22,973	1861–62	21,705	22,973	604	23,577	- 2,133	21,444	858	..	3,364	- 62,650	..	84,094
* Cumbum tank	4,590	1876–77	4,590	4,590	120	4,710	- 6,304	- 1,594	- 64	..	1,387	- 36,275	..	34,681

• Vallár anicut system	6,218	1872–73	6,218	6,218	163	6,381	3,653	10,034	401	..	286	2,875	..	7,159
• Marudur do.	4,009	1872–73	4,009	4,009	105	4,114	− 93,137	− 89,023	− 3,561	9,383	..	1,45,550	2,34,573	..
• Thadapalli channel	8,720	1854–55	8,720	8,720	228	8,948	− 23,809	− 14,861	− 594	2,077	..	37,075	51,936	..
• Arkenkóta do.	9,822	1859–60	9,565	9,822	257	10,079	13,550	23,629	945	..	277	16,700	..	6,929
• Kalingaroyen do.	5,384	1854–55	5,354	5,384	141	5,525	21,360	26,885	1,075	..	779	7,400	..	19,485
• Cheyár anicut system	23,248	1852–53	23,248	23,248	609	23,856	-91	23,765	951	..	10,967	−2,50,400	..	2,74,165
• Poiney do	21,353	1855–56	21,353	21,353	559	21,912	− 32,557	− 10,645	− 426	..	1,076	− 37,550	..	26,905
Total ..	6,45,838	..	6,18,740	6,23,919	53,619	6,77,538	− 6,93,725	− 16,187	− 647	..	23,751	−6,09,950	..	5,93,763
Navigation.														
Buckingham canal	8,61,200	1837–38	7,23,717	7,49,537	45,851	7,95,388	3,74,160	11,69,548	46,782	..	54,242	−1,86,500	..	13,56,048
Chilka lake do.	3,000	..	3,024	3,024	79	3,103	1,384	4,487	179	..	764	− 14,625	..	19,112
Ganjam-Gopálpur canal	43,100	..	13,720	14,280	1,237	15,517	1,602	17,119	685	..	691	−150	..	17,269
Vedárniem canal	..	..	..	..	..	..	1,139	1,139	45	..	303	− 6,450	..	7,589
Total ..	9,07,300	..	7,40,461	7,66,841	47,167	8,14,008	3,78,285	11,92,293	47,691	..	56,000	−2,07,725	..	14,00,018
Total, Minor Works and Navigation ..	15,53,138	..	13,59,201	13,90,760	1,00,786	14,91,546	− 3,15,440	11,76,106	47,044	..	79,751	−8,17,675	..	19,93,781

NOTE.—This statement includes Kurnool canal purchased from the late Madras Irrigation Canal Company. The result of taking over this work in 1882–83 was to reduce the percentage of net revenue on capital cost of irrigation works in Madras for which Capital and Revenue accounts are kept from 14·9, the average of three years immediately preceding the transfer to 5·4.

• The outlay has been taken as estimate.

MADRAS,
25th October 1892.

(Signed) I. S. SHERLOCK-HUBBARD,
Examiner, Public Works Accounts.

Table III.—Main heads of Revenue and Working expenses for the year ended 31st March 1892.

Irrigation works.	REVENUE. Irrigation. Water-rate directly paid.	REVENUE. Irrigation. Shares of land Revenue.	REVENUE. Irrigation. Total.	REVENUE. Navigation.	REVENUE. Plantations and land.	REVENUE. Water power.	REVENUE. Miscellaneous.	REVENUE. Total.	Remission of revenue.	Net revenue.	WORKING EXPENSES. Revenue management. Establishment charges. Direction.	WORKING EXPENSES. Revenue management. Establishment charges. Executive.	WORKING EXPENSES. Revenue management. Establishment charges. Navigation.	WORKING EXPENSES. Revenue management. Establishment charges. Civil officers.	WORKING EXPENSES. Revenue management. Total revenue management.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
MAJOR WORKS.															
Irrigation Works.															
Godávari delta system	2,10,243	16,232	2,26,475	9,629	511	..	956	2,37,571	28	2,37,543	2,740	10,962	..	11,324	25,026
Kistna do.	1,65,139	17,988	1,83,127	3,457	301	..	1,072	87,957	33	1,87,924	2,068	8,274	..	9,156	19,498
Cauvery do.	58,476	14,151	72,627	..	224	..	246	73,097	1	73,096	711	2,844	..	3,631	7,186
Pennér anicut system	— 782	1,085	303	..	..	..	83	386	..	386	— 9	— 36	..	15	— 30
Srívaikuntham anicut system	10,673	181	10,854	..	..	..	156	11,010	..	11,010	131	525	..	543	1,199
Sangam anicut system	— 198	1,055	857	..	..	..	74	931	..	931	— 3	— 11	..	43	29
Kurnool canal	13,427	..	13,427	134	..	..	776	14,337	64	14,273	204	819	..	671	1,694
Barúr tank project	548	..	548	..	..	..	..	548	..	548	6	27	..	27	60
Periyár project	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	4,57,526	50,692	5,08,218	13,220	1,036	..	3,363	5,25,837	126	5,25,711	5,848	23,404	..	25,410	54,662
Protective Works.															
Rushikulya project	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, Major Works ..	4,57,526	50,692	5,08,218	13,220	1,036	..	3,363	5,25,837	126	5,25,711	5,848	23,404	..	25,410	54,662
MINOR WORKS AND NAVIGATION.															
Irrigation Works.															
Chembrambakam tank	27	39	66	..	..	..	1	67	..	67	..	..	..	3	3
Pálár anicut system	..	..	..	..	..	..	131	131	..	131	3	10	..	..	13
Pelandorai do.	..	..	..	..	..	..	11	11	..	11	..	1	..	..	1
Madras water-supply and irrigation extension project	511	45	556	..	..	..	1,444	2,000	..	2,000	29	115	..	28	172
Lower Coleroon anicut system	..	..	..	..	..	..	76	76	..	76	2	5	..	..	7
Shatiatope do.	..	..	..	..	..	..	19	19	..	19	..	2	..	..	2
Vriddháchalam do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mehmattur do.	703	3	706	..	..	..	1	707	..	707	..	..	..	35	35
Tirukoilúr do.	..	..	..	..	..	..	38	38	..	38	1	3	..	..	4
Cumbum tank	— 425	53	— 372	..	..	..	..	— 372	..	— 372	..	..	..	— 18	— 18
Vallár anicut system	169	48	217	..	..	..	..	217	..	217	..	..	..	11	11
Marudur do.	7,106	23	7,129	..	..	..	107	7,236	3	7,233	2	9	..	356	367
Tadapalli channel	2,616	259	2,875	..	..	..	1	2,876	..	2,876	..	..	..	144	144

Table III.—Main heads of Revenue and Working expenses for the year ended 31st March 1892—cont.

Irrigation works.	Working expenses—*cont.* Maintenance of works. Establishment charges. Direction.	Executive.	Medical.	Total.	Works.	Repairs.	Tools and plant.	Plantation.	Total maintenance.	Total direct charges.	Indirect charges.	Grand total working expenses.
	17	18	19	20	21	22	23	24	25	26	27	28
	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
MAJOR WORKS.												
Irrigation Works.												
Godávari delta system	1,249	4,997	..	6,246	3,560	24,151	3,825	57	37,839	62,865	3,255	66,120
Kistna do.	996	3,984	..	4,980	1,449	20,648	4,373	211	31,664	51,162	2,472	53,634
Cauvery do.	— 14	— 55	..	— 69	3,440	— 3,321	— 79	..	— 29	7,157	629	7,786
Pennér anicut system	67	270	..	337	209	1,286	..	..	1,832	1,802	59	1,861
Srivaikuntham anicut system	48	190	..	238	535	542	— 8	..	1,307	2,506	166	2,672
Sangam do.	134	537	..	671	1,271	1,645	— 4	..	3,583	3,612	92	3,704
Kurnool canal	406	1,625	..	2,031	938	7,961	325	43	11,298	12,992	453	13,445
Barúr tank project	27	107	..	134	214	370	..	..	718	778	24	802
Periyár project	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	2,913	11,655	..	14,568	11,616	53,282	8,435	311	88,212	1,42,874	7,150	1,50,024
Protective Works.												
Rushikulya project	..	..	..	..	..	..	..	..	..	..	..	..
Total, Major Works ..	2,913	11,655	..	14,568	11,616	53,282	8,435	311	88,212	1,42,874	7,150	1,50,024
MINOR WORKS AND NAVIGATION.												
Irrigation Works.												
Chembrambakam tank	33	133	..	166	— 219	941	— 11	..	877	880	23	903
Pálár anicut system	330	1,318	..	1,648	1,615	5,561	..	..	8,824	8,837	233	9,070
Pelandorai do.	59	238	..	297	351	969	..	..	1,617	1,618	42	1,660
Madras water-supply and irrigation extension project	46	182	..	228	— 299	1,290	— 1	..	1,218	1,390	52	1,442
Lower Coleroon anicut system	91	363	..	454	274	1,718	..	..	2,446	2,453	65	2,518
Shatiatope do.	76	304	..	380	165	1,490	..	..	2,035	2,037	53	2,090
Vriddhachalam do.	38	150	..	188	284	533	..	..	1,005	1,006	26	1,031
Mehmattur do.	57	229	..	286	..	1 243	..	..	1,529	1,564	40	1,604
Tirukoilúr do.	93	370	..	463	490	1,522	..	..	2,475	2,479	65	2,544
Cumbum tank	38	150	..	188	20	799	64	..	1,071	1,053	26	1,079
Vellár anicut system	4	13	..	17	..	72	..	..	89	100	2	102
Marudur do.	38	152	..	190	60	766	..	..	1,016	1,383	28	1,411
Tadapalli channel	38	152	..	190	618	415	..	..	1,223	1,367	26	1,393

Table III.—Main heads of Revenue and Working expenses for the year ended 31st March 1892—cont.

Irrigation works.	Revenue. Irrigation. Water-rate directly paid.	Revenue. Irrigation. Shares of land revenue.	Revenue. Irrigation. Total.	Revenue. Navigation.	Revenue. Plantations and land.	Revenue. Water power.	Revenue. Miscellaneous.	Revenue. Total.	Remission of revenue.	Net revenue.	Working expenses. Revenue management. Establishment charges. Direction.	Working expenses. Revenue management. Establishment charges. Executive.	Working expenses. Revenue management. Establishment charges. Navigation.	Working expenses. Revenue management. Civil officers.	Working expenses. Revenue management. Total Revenue management.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
MINOR WORKS AND NAVIGATION—*cont.*															
Irrigation Works—cont.															
Arkenkóta channel	830	28	858	..	..	..	..	858	..	858	..	..	..	43	43
Kalingaroyen do.	1,756	39	1,795	..	..	..	22	1,817	..	1,817	..	2	..	90	92
Cheyár anicut system	..	..	..	..	..	..	59	59	..	59	1	5	..	..	6
Poiney do.	..	..	..	..	..	..	73	73	..	73	1	6	..	..	7
Total ..	13,293	537	13,830	..	..	..	1,983	15,813	3	15,810	39	158	..	692	889
Navigation.															
Buckingham canal	..	..	..	9,574	..	..	259	9,833	6	9,827	197	787	..	..	984
Chilka lake do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ganjam-Gopálpur canal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vadárniem canal	..	..	..	123	..	..	..	123	..	123		10	..	..	12
Total ..	..	..	..	9,697	..	..	259	9,956	6	9,950	199	797	..	..	996
Total, Minor Works and Navigation ..	13,293	537	13,830	9,697	..	..	2,242	25,769	9	25,760	238	955	..	692	1,885

Table III.—Main heads of Revenue and Working expenses for the year ended 31st March 1892—cont.

Irrigation works.	Working expenses—cont.											
	Maintenance of works.										Indirect charges.	Grand total working expenses.
	Establishment charges.				Works.	Repairs.	Tools and plant.	Plantation	Total maintenance.	Total direct charges.		
	Direction.	Executive.	Medical.	Total.								
	17	18	19	20	21	22	23	24	25	26	27	28
	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
MINOR WORKS AND NAVIGATION—*cont.*												
Irrigation Works—cont.												
Arkenkóta channel	5	22	..	27	2	114	..	..	143	186	4	190
Kalingaroyen do.	52	208	..	260	51	1,081	..	..	1,392	1,484	37	1,521
Cheyár anicut system	367	1,468	..	1,835	5,688	2,288	..	..	9,811	9,817	258	10,075
Poiney do.	57	227	..	284	414	829	..	..	1,527	1,534	41	1,575
Total ..	1,422	5,679	..	7,101	9,514	21,631	52	..	38,298	39,187	1,021	40,208
Navigation.												
Buckingham canal	581	2,322	..	2,903	487	12,044	233	92	15,759	16,743	544	17,287
Chilka lake do.	21	86	..	107	..	463	..	..	570	570	15	585
Ganjam-Gopálpur canal	..	..	..	..	..	6	..	..	6	6	..	6
Vedárniem canal	13	54	..	67	..	291	..	..	358	370	11	381
Total ..	615	2,462	..	3,077	487	12,804	233	92	16,693	17,689	570	18,259
Total, Minor Works and Navigation ..	2,037	8,141	..	10,178	10,001	34,435	285	92	54,991	56,876	1,591	58,467

(Signed) I. S. SHERLOCK-HUBBARD,
Examiner, Public Works Accounts.

MADRAS,
25th October 1892.

Order—dated 8th November 1892, No. 927 I., Public Works.

Ordered that the statements received from the Examiner of Public Works Accounts be forwarded to the Government of India with reference to its circular No. XXIII of 1881.

(Here enter No. 928 I., Public Works, dated 8th November 1892.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineers.
,, the Examiner, Public Works Accounts.
,, the Revenue Department.
Editors' Table.

Endorsement—dated 8th November 1892, No. 928 I., Public Works.

Forwarded accordingly.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 8th.

Recd. *Encl.*

G.O., 8th Nov. 1892, Nos. 927, 928 I.

NOVEMBER.

Irrigation and Navigation Works

Forwarding the statements of financial results of — for 1891-92.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From J. P. DAVIDSON, Esq., Executive Engineer, South Arcot division, to the Superintending Engineer, V Circle, dated Cuddalore, 18th October 1892, No. 695.

In his audit note on the accounts for the month of July 1892 the Examiner of Public Works Accounts having remarked that percentage charges for establishment and tools and plant should be charged on the outlay incurred on registering depth of water at the Pullagacherry anicut, estimate Rs. 50, sanctioned in G.O., No. 793 I., dated 21st September 1892, communicated with your endorsement No. 5095 A., dated 9th October 1892, I have the honour to inform you that the outlay incurred is not on account of work executed, but is the pay of head cooly who is employed in registering the depth of water for which the ryots contributed Rs. 50.

2. The registering of these readings at the expense of the ryots was ordered by this department with a view to deciding a question regarding a new channel to be excavated; the readings were to be taken throughout the south-west and north-east monsoons and the contribution asked from the ryots was Rs. 50 which represents the monthly pay of the water registrar. I consider it will be hard on the ryots to compel them to pay the $24\frac{1}{2}$ per cent. (Rs. 12), for establishment and tools and plant and I have therefore the honour to request that sanction of Government may be obtained to the omission of these charges under rule II of para. 81, chapter IX, of India Code.

No. 325 E.I.

Submitted to the Chief Engineer for Irrigation for sanction to the usual percentage charges for establishment and tools and plant not being enforced in this case under the explanation given by the Executive Engineer.

(Signed) W. HUGHES,
Superintending Engineer, V Circle.

22nd October 1892.

ORDER—dated 8th November 1892, No. 929 I., Public Works.

The payment of the usual percentage for establishment and tools and plant charges will not be enforced in this case.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 8th

Recd. *Encl.*

G.O., 8th Nov. 1892, No. 929 I.

NOVEMBER.

Pullagacherry Anicut

Ordered that the payment of percentage for establishment and tools and plant charges in the case of the work "registering depth of water at the —, South Arcot division," be not enforced.

PUBLIC WORKS DEPARTMENT.

GOVERNMENT OF MADRAS.

Irrigation.
Account.

Read—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 25th October 1892, No. 1599 G.D.

I have the honour to submit a completion report verified by the Examiner, Public Works Accounts, for raising the Godávari left embankment from Rajahmundry to Purushotapatnam sanctioned in G.O., No. 394 I., dated 18th July 1890.

2. The estimate has been exceeded by Rs. 798. Of this, excess Rs. 874 is due to insufficient provision for land compensation, Rs. 606 on earthwork due to more earth being required at village crossings ; on the other hand, there is a saving of Rs 782 on certain items for supervision, &c., which were not required ; so that the actual excess over the sanctioned estimate is Rs. 798.

3. As the excess is more than 5 per cent. and so beyond my power of sanction, I have the honour to request that you will be good enough to obtain the sanction of Government to authorize the Examiner to admit the excess outlay of Rs. 798.

Order—dated 8th November 1892, No. 930 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the expenditure of Rs. 15,148 incurred on raising the Godávari left embankment from Rajahmundry to Purushotapatnam against an estimate of Rs. 14,350, sanctioned in G.O., No. 394 I., dated 18th July 1890.

2. This sanction is registered as No. 128 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with one enclosure.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 8th.

Recd. *Encl.*

G.O., 8th Nov. 1892, No. 930 I.

NOVEMBER.

Godavari Left Embankment

Excess outlay incurred on raising the — from Rajahmundry to Purushotapatnam, ordered to be passed.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ— again G.O., dated 20th April 1889, No. 197 I., Public Works.

READ—also the following paper :—

No. 182 I.

Note by the Chief Engineer for Irrigation.

Up to the 31st March 1892, 3,253 works have been sanctioned under Tank Restoration Scheme at an estimated cost of Rs. 35,22,604, and out of these only 517 works, on which Rs. 3,28,507 have been expended out of a total of Rs. 23,21,235, have been taken over by the Revenue Department.

2. The investigation of tanks is progressing rapidly under the six parties now employed thereon, and considerable work is being thrown on the Public Works Department subordinates in carrying out the repairs to minor as well as major tanks.

3. The orders conveyed in para. 2 of G.O., dated 20th April 1889, No. 197 I., were to the effect that the maintenance of all minor tanks after being put in repair was to remain in the hands of the Public Works Department after they had done all that was necessary to put them in a state of efficiency in accordance with the scientifically based estimates prepared for them by the special establishment employed for the purpose.

4. There appears to me no reason why each individual work should not be handed over to the Revenue Department as soon as the repairs are completed. The fact of these remaining in the hands of the Public Works Department for any length of time after being repaired gives an opening to the villagers to neglect taking those steps for petty repairs which come under the head of "Kudimaramut" that they are bound to take. As the works completed multiply in number, it obviously goes beyond the powers of the Public Works Department executive strength, as at present constituted, to look after their maintenance. I know of one case where a third-grade overseer in the North Arcot division had no less than 70 tank restoration works on his hands, to say nothing of those which had been completed, and for the condition of which the intention of the orders of Government would be to hold him responsible.

5. In handing over each work as it is completed to the Revenue Department, the latter, it is to be hoped, will be prompt in accepting the responsibility and that no futile objections may be raised against the condition of the work, which having been carried out and supervised by a technical department would, it is thought, be no worse than that of works executed by the Revenue Department and with which they are satisfied themselves.

OOTACAMUND, 28th October 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.
Acting Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 10th November 1892, No. 932 I., Public Works.

Proceedings of the Madras Government, No. 197 I., dated 20th April 1889.

The proposals made in the above note by the Chief Engineer for Irrigation are generally approved, and in supersession of the orders marginally noted, His Excellency the Governor in Council directs that each individual "minor" work shall be handed back to the Revenue Department immediately on completion of the restoration work. Orders will be issued in the Revenue Department with reference to the last paragraph of the note by the Chief Engineer for Irrigation impressing upon Collectors of districts the necessity for promptly taking over works of the class referred to when notification of their readiness to hand them over has been made by the responsible officers of the Public Works Department.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To Superintending Engineers.
,, the Chief Engineer for Irrigation.
,, the Examiner, Public Works Accounts.
,, the Revenue Department.
Editors' Table.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 10th.

Recd. *Encl.*

G.O., 10th Nov. 1892, No 932 I.

NOVEMBER.

Tank Restoration Works

Passing orders in regard to "*minor*" works being handed back to the Revenue Department immediately on completion of the restoration work.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From J. W. MARTIN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 28th October 1892, No. 243 B.C.

I have the honour to forward herewith, for your approval and sanction of Government, statements of floating plant in the Buckingham Canal for 1893–94.

2. The probable cost of upkeep has been estimated at only Rs. 660 against Rs. 870 for 1892–93; to this, Rs. 620 have also been added for the upkeep of ferry-boats and ballacuts against Rs. 600 for 1892–93.

ORDER—dated 11th November 1892, No. 937 I., Public Works.

The estimate of the cost of maintaining the floating plant of the Buckingham Canal is approved; Rs. 1,280 will be provided on this account in the budget estimates for "Minor Works and Navigation" for 1893–94.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle,
with 3 enclosures.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 11th.

Recd. *Encl.*

G.O., 11th Nov. 1892, No. 937 I.

NOVEMBER.

Floating Plant

Estimate of the cost of maintaining the — of the Buckingham Canal for 1893–94, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From J. W. MARTIN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 26th October 1892, No. 462 N.L.

I have the honour to forward, herewith, for your approval and sanction of Government, an estimate, amounting to Rs. 4,820, for compensation for land taken up for the Pennér right flood embankment from anicut to sea.

2. A report explaining the circumstances under which the land was taken up accompanies the estimate.

ORDER—dated 11th November 1892, No. 938 I., Public Works.

The following estimate is sanctioned :—

Provincial.
43. Minor Works and Navigation.
Agricultural Works.
Nellore Division.
Original Works.
River Embankments.

	RS.
Pennér right flood embankment from anicut to sea—compensation for land, estimate	4,820

2. This sanction is registered as No. 129 I. of 1892-93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with 5 enclosures.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 11th.

Recd. *Encl.*

G.O., 11th Nov. 1892, No. 938 I.

NOVEMBER.

Penner Right Flood Embankment

Estimate of Rs. 4,820 for compensation for lard taken up for the — from anicut to sea, Nellore division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From G. P. CLERK, Esq., Deputy Commissioner of Revenue Settlement Party No. III, Tanjore, to the Collector of Tanjore, dated 24th August 1892, No. 119 C.

I have the honour to forward a statement showing the present condition of the irrigation works in Patukóta taluk.

2. In Wandiwash taluk of North Arcot and in Dindigul and Mélúr taluks of Madura, I found most of the tanks in a deplorable condition, but matters are still worse, if possible, in Patukóta and South Tanjore taluks of this district. There are 99 Government villages in Patukóta and 232 tanks, and 203 tanks in 93 villages are in need of repairs. It is not only the smaller tanks that have been neglected so long but also "Imperial" tanks irrigating over 200 acres of land. You will observe that the "Imperial" tank in village No. 18, irrigating 362 acres, has no masonry sluices. I have had to place 6 tanks, each irrigating over 100 acres, in the lowest or fifth group in consequence of the neglected condition thereof. The present wet revenue of the taluk will be increased by settlement by about Rs. 25,000 or 34 per cent. in consequence of the rates now in force being so absurdly low — an average of only Rs. 3 per acre — and there is, therefore, all the greater need for putting all the tanks in thorough repair.

3. The grouping of the tanks will not be generally affected by being put in good order, but the following 22 tanks might be raised one group, if thoroughly repaired.

Map number.	Name of village	Name of tank.	Settlement grouping. Present.	Settlement grouping. Future.	Occupied area and assessment. As per revenue. Extent.	As per revenue. Assessment.	As per settlement. Present grouping. Extent.	As per settlement. Present grouping. Assessment.	As per settlement. If raised a group.	Difference. Assessment. Columns 7 and 9.	Difference. Assessment. Per-centage.	Difference. Assessment. Columns 9 and 10.	Difference. Assessment. Per-centage.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
					ACS. C.	RS. A. P.	ACS. C.	RS. A. P.	RS A. P.	RS. A. P.	RS.	RS. A. P.	RS.
71	Nilaiyur	Periya éri	3	2	245 60	757 7 5	264 17	1,124 1 0	1,282 7 0	+ 366 10 0	+ 48	+ 158 6 0	+ 14
72	Olavanór	Periya éri	3	2	265 94	866 13 10	281 40	1,279 0 0	1,462 4 0	+ 412 2 0	+ 48	+ 183 4 0	+ 14
74	Tandalai	Tandalai éri	3	2	180 67	607 12 2	181 63	733 13 0	824 10 0	+ 126 1 0	+ 21	+ 90 13 0	+ 12
78	Perumarudúr ..	Perumarudúr éri	3	2	249 64	837 3 4	267 19	1,107 13 0	1,241 7 0	+ 270 10 0	+ 32	+ 133 10 0	+ 12
79	Sattakudi	Periya éri and Sinna endal ..	3	2	196 45	678 8 5	192 61	812 15 0	909 4 0	+ 134 7 0	+ 20	+ 96 5 0	+ 12
..	....	Sirukasuvoyal Periya éri ..	3	2	131 43	502 14 9	133 52	580 3 0	646 15 0	+ 77 4 0	+ 15	+ 66 12 0	+ 12
82	Sirumarudur ..	Periya éri	3	2	345 71	1,408 5 10	374 88	1,558 12 0	1,776 3 0	+ 150 6 0	+ 11	+ 217 7 0	+ 14
83	Munnamolai ..	Munnamolai Periya éri ..	3	2	71 40	259 7 5	75 24	376 3 0	451 7 0	+ 116 12 0	+ 45	+ 75 4 0	+ 20
87	Okkúr	Okkúr éri	3	2	382 63	1,472 5 11	396 51	1,606 13 0	1,805 1 0	+ 134 7 0	+ 9	+ 198 4 0	+ 12
		Total of 9 ..	..	..	2,069 47	7,390 15 1	2,167 15	9,179 9 0	10,399 10 0	+ 1,788 10 0	+ 24	+ 1,220 1 0	+ 13
			..	..	..	3 9 2	..	4 3 9	4 12 9	..	..	..	..
7	Nambivayal ..	Sittéri	4	3	208 78	340 12 6	197 42	671 4 0	769 15 0	+ 330 7 0	+ 97	+ 98 11 0	+ 15
..	....	Kusavanmadai	4	3	275 7	369 0 2	269 87	951 8 0	1,086 7 0	+ 582 8 0	+ 158	+ 134 15 0	+ 14
12	Kannukudi ..	Meléri	4	3	118 90	167 0 0	128 16	449 5 0	513 6 0	+ 282 5 0	+ 169	+ 64 1 0	+ 14
28	Idayatti	Periya éri	4	3	802 34	1,506 12 9	810 95	2,904 11 0	3,360 3 0	+ 1,397 14 0	+ 93	+ 455 8 0	+ 16
34	Sinnavidudi Tenpadi.	Tandakulam hissa	4	3	244 33	692 5 4	241 55	846 12 0	967 8 0	+ 154 7 0	+ 22	+ 120 12 0	+ 14
63	Kolakudi	Periya éri	4	3	113 58	519 6 11	119 82	499 7 0	559 6 0	− 20 0 0	− 4	+ 59 15 0	+ 12
		Total of 6 ..	..	..	1,763 0	3,595 5 8	1,767 77	6,322 15 0	7,256 13 0	+ 2,727 9 0	+ 76	+ 933 14 0	+ 15
			..	..	..	2 0 8	..	3 9 5	4 1 8	..	..	..	..
9	Sendankudi ..	Sendan éri	5	4	117 66	288 5 5	111 44	367 13 0	423 9 0	+ 79 8 0	+ 28	+ 55 12 0	+ 15
10	Veppankulam ..	Periya éri	5	4	158 34	148 12 1	140 90	437 8 0	512 7 0	+ 288 12 0	+ 194	+ 74 15 0	+ 17
13	Kannukudi melpadi ..	Periyakulam	5	4	84 1	79 7 6	91 95	268 15 0	314 15 0	+ 189 7 0	+ 239	+ 46 0 0	+ 18
..	....	Sokkan éri	5	4	47 37	90 8 7	52 63	161 3 0	187 8 0	+ 70 10 0	+ 79	+ 26 5 0	+ 16
16	Olaiyakunnam ..	Nattan éri	5	4	177 8	283 4 4	180 80	480 11 0	571 1 0	+ 197 7 0	+ 70	+ 90 6 0	+ 19
..	....	Kumalan éri	5	4	71 54	99 13 2	63 55	164 0 0	195 12 0	+ 64 3 0	+ 64	+ 31 12 0	+ 20
19	Vattakudi	Nedu éri	5	4	129 46	198 6 10	128 67	389 1 0	453 7 0	+ 190 10 0	+ 92	+ 64 6 0	+ 16
		Total of 7 ..	..	..	785 46	1,188 9 11	769 94	2,269 3 0	2,658 11 0	+ 1,080 9 0	+ 91	+ 389 8 0	+ 17
			..	..	..	1 8 3	..	2 15 2	3 7 3	..	..	..	..
		Grand Total ..	..	22	4,617 93	12,174 14 8	4,704 86	17,771 11 0	20,315 2 0	+ 5,596 12 0	+ 46	+ 2,543 7 0	+ 14
			..	..	..	2 10 2	..	3 12 5	4 5 1	..	..	..	..

4. It will be observed that the increased revenue obtained by raising these tanks a group will be Rs. 2,543 per annum. This sum at 5 per cent. interest represents a capital sum of Rs. 50,860, but, as the cost of thoroughly repairing the tanks will not exceed at the most Rs. 10,000, this outlay will yield a return of 20 per cent.

5. Not only have the irrigation works been neglected for many years, but the ayacuts of several tanks have, for some reasons with which I am not at present acquainted, been handed over to the ryots on unnecessarily low special rates. Under one tank of considerable capacity, 387 acres are at present held at a *dry* rate of Rs. 1–2–5 per acre. The Deputy Collector in charge of the taluk informs me that he can find no record to show why these lands are held at this special rate—a rate which entails a loss of about 1,000 rupees of revenue per annum. I have addressed you separately regarding these special-rate tanks with a view to ascertaining whether there is any cause why settlement wet rates should not be applied thereto.

6. I have already stated that, in consequence of the extremely low wet rates now prevailing, there will be a heavy increase by settlement under almost every tank, and it would be satisfactory both to myself and to the ryots concerned if all the tanks could be repaired by the time the settlement rates are put in force in 1894. In some cases, where the proposed increase in revenue is exceptionally heavy, I may have to reduce, at time of settlement, the grouping of the tanks unless they are repaired meanwhile, and this will result in an immediate loss of revenue to the State. On the other hand, those district officers who are acquainted with the taluk consider that there are several irrigation works which might be constructed with profit both to the State and to the ryots. If anicuts were constructed across several small rivers, the flood water which now flows into the sea could be drawn off to supply the neighbouring tanks. Most of these tanks could be raised a group in consequence of the improved supply and the revenue increased thereby. I am of opinion that, if a lakh of rupees were expended during the next 18 months in improving the irrigation of the taluk, the return would not be less than 15 per cent on the outlay.

Endorsement by the Collector of Tanjore, dated 8th October 1892, No. 654.

True copy submitted to the Board of Revenue (Revenue Settlement, Land Records and Agriculture).

2. It cannot be denied that the tanks in the Government villages in the Patukóta taluk have been greatly neglected. Putting aside earthwork, the Deputy Commissioner proposes the construction of 295 sluices, 59 calingulahs and 7 anicuts, not to mention the repair of a number of existing masonry works. I cannot on a moderate computation estimate the cost of these masonry works at less than a lakh. The cost of putting the bunds in repair would, I think, come to at least another lakh. Unfortunately there is every sort of difficulty in the way of getting masonry work done in the Patukóta taluk. Materials and workmen are hard to get and the wide extent over which the villages are scattered renders supervision difficult. New works and repairs to the extent proposed will never be satisfactorily carried out by the ordinary Revenue or Public Works establishment. The Executive Engineer in charge of the taluk has his time fully occupied by the more pressing demands of the south-eastern part of the delta which is also in his charge. I beg to represent the necessity of appointing a special officer of the Public Works Department with the necessary staff to examine the tanks to prepare the requisite estimates and carry out the work. Mr. Clerk believes, and so do I, that the expenditure would result in a large extension of wet cultivation and a considerable increase of revenue. I would strongly recommend the provision of the necessary funds on the ground that the expenditure would be immediately reproductive.

Reference on the above, dated 27th October 1892.

Forwarded to the Chief Engineer for Irrigation for favour of his opinion.

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

No. 183 I.

Note by the Chief Engineer for Irrigation.

I am tolerably well acquainted with the condition of the irrigation works in the Patukóta taluk as they existed in 1876—80. I do not think this part of the district has ever received the attention due to it. Its capabilities are considerable inasmuch as there are numerous large streams taking their rise in the Pudukóta territory which pass through it and the flood waters of which are wholly unutilised. The idea that anicuts in connection with existing tanks might be constructed across these streams is a correct and feasible one, and it is proposed therefore that the Tank Restoration Scheme party now working in Salem be transferred to Patukóta taluk under the direct superintendence of Mr. J. M. Bell, the Executive Engineer, whose head-quarters will be at Patukóta itself. The party working under Mr. Bell in the North Arcot district might also be transferred to Patukóta, as the work they are engaged upon there is not of such an emergent nature and can well stand over.

OOTACAMUND, 29th Oct. 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 12th November 1892, No. 944 I., Public Works.

His Excellency the Governor in Council notices with regret the unsatisfactory condition into which the irrigation works in the Patukóta taluk have been allowed to lapse and which is anything but creditable to the Public Works Department and the Revenue Department who are responsible for the maintenance of these works.

2. The suggestion contained in the note by the Chief Engineer for Irrigation is approved and immediate steps will be taken to send Mr. J. M. Bell and the Tank Restoration parties under his charge now working in the Salem and North Arcot divisions to the Patukóta taluk to carry out the necessary investigations for restoring the tanks and initiating such other works of improvement as are indicated in the letter of the Deputy Commissioner of Revenue Settlement embodied in the above references.

3. Care will be taken that an ample allotment of funds from the Irrigation budget in 1893–94 is made for execution of the works designed by the Tank Restoration parties and orders will be issued in the Revenue Department, through the Board of Revenue, that the Deputy Commissioner should arrange the settlement of the taluk on the assumption that the necessary improvements will be carried out at once, more especially to the twenty-two tanks noted in the statement which accompanied his letter.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
" Superintending Engineer, V Circle.
" " " IV "

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 12th.

Recd. *Encl.*

G.O., 12th Nov. 1892, No. 944 I.

NOVEMBER.

Irrigation Works in Patukota Taluk

Passing orders regarding the restoration of —, Tanjore district.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper:—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 16th September 1892, No. 1359 G.D.

I have the honour to submit, herewith, the usual annual statements A, A-I, B, C, and D, showing navigation receipts and charges of the Godávari system of canals for the official year 1891–92.

2. The subjoined statement exhibits the receipts and charges of the year as compared with those of the preceding year:—

—	1891–92.	1890–91.	Increase.	Decrease.
Receipts.	RS.	RS.	RS.	RS.
1. License fees for Government boats	4,707	5,520	..	813
2. Do. for steamers and dredges	275	..	275	..
3. Do. for staff and jolly boats	159	147	12	..
4. Do. for passenger boats	4,067	3,844	223	..
5. Do. for cargo boats	33,184	29,529	3,655	..
6. Do. for miscellaneous, including private and pleasure boats and fees for numbering boats	664	343	321	..
7. Tolls on all kinds of boats and rafts	51,009	50,858	151	..
8. Rents of staff boats	2,222	..	2,222	..
Total ..	96,287	90,241	6,859	813
Charges.				
9. Navigation establishment including Boat Superintendent ..	23,463	23,481	..	18
10. Lock and lock weir repairs	17,089	19,559	..	2,470
11. Navigation buildings	477	473	4	..
12. Tow path maintenance	1,136	3,916	..	2,780
13. Dredging	5,764	5,783	..	19
14. Share of canal maintenance	21,543	16,626	4,917	..
15. Miscellaneous including any charges not appertaining to the above items	1,680	4,686	..	3,006
16. Repairs of staff boats	1,791	..	1,791	..
Total ..	72,943	74,524	6,712	8,293

Receipts.

3. The decrease under item 1 is owing to 16 punts having been transferred to Kistna district.

4. The increase under item 2 is due to steamer *Arthur Cotton* having been licensed this year. No license was issued last year as she was under repairs.

5. The increase under item 3 is due to one of the *Survey Navas* being licensed.

6. The increases under items 4 and 5 are due to some extra boats having been licensed in this delta in excess of the number of last year.

7. During this year under review there was no profit on boat office owing to the transfer of 16 punts to Kistna delta and also to increase of salary of the crew.

Charges.

8. The large increase under Canal Maintenance, item 14, the Executive Engineer, Godávari Eastern division, explains is apparently due to the large amount of work done on silt clearance of Sámálkót canal during the closure of 1891.

9. The decreases under items 9, 10, 12 and 15 are owing to less expenditure having been incurred under the heads than in the previous year.

10. The Executive Engineer, Eastern division, states that the increase under item 16 is due partly to the hulls of staff boats having been thoroughly repaired during the year and partly due to the centage of 20 per cent. charges on the actual cost of repairs carried out by workshops in accordance with G.O., No. 2892 W., of 21st October 1891.

11. I beg to enclose a statement showing that, during the year under review, punishments in 97 cases were inflicted for infringement of navigation rules against 32 in the previous year. Of this, 45 cases were on account of either not having a man in charge of boat, or not having light and masts down when moored, as also for not mooring fast-stern and stern to the bank in a single line under regulation 26 of the Navigation bye-laws.

ENCLOSURES.

A.—Statement of receipts and charges, Godávari delta navigation, for the official year 1891–92.

RECEIPTS FOR THE OFFICIAL YEAR 1891–92.		
Description.	Amount.	Remarks.
	RS.	
License fees for Government boats.	4,707	See statement B.
Do. for steamers and dredges ..	275	
Do. for staff boats and jolly boats ..	159	
Do. for passenger boats ..	4,067	
Do. for cargo boats ..	33,184	
Do. for miscellaneous, including private and pleasure boats and duplicate license fees ..	393	
Tolls of Government steamers ..	123	
Do. of cargo boats	23,746	
Do. of passenger boats	9,902	
Do. of dredges	..	
Do. of miscellaneous	120	
Do. of rafts	17,118	
Rents collected from staff boats ..	2,222	
Fees collected for painting numbers on boats	271	
	96,287	
Loss	17,998	
Total ..	1,14,285	

CHARGES FOR THE OFFICIAL YEAR 1891–92.		
Description.	Amount.	Remarks.
	RS.	
(1) Navigation establishment, including Boat Superintendent	23,463	See statement C.
(2) Lock and lock weir repairs.	17,089	
(3) Navigation buildings ..	477	
(4) Tow path maintenance ..	1,136	
(5) Dredging	5,764	
(6) Share of canal maintenance.	21,543	
(7) Repairs of staff boats ..	1,791	
(8) Charges for painting numbers on boats	269	
(9) Miscellaneous (including charges not appertaining to the first eight items) ..	1,411	
	72,943	
Interest at 2 per cent. on capital outlay during the year on navigation works proper ..	816	
Interest for the year on capital outlay on navigation works proper to end of 1890–91 at 4 per cent.	40,526	
Total ..	1,14,285	

A.-I.—Statement of Capital outlay on navigation works proper of the Godávari delta from the year 1870–71 inclusive.

Section of delta.	To end of 1890–91.	For 1891–92.	Total.
	RS.	RS.	RS.
Eastern delta	3,05,189	* 40,803	3,45,992
Central „	2,58,149	1	2,58,150
Western „	4,49,832	...	4,49,832
Total ...	10,13,170	40,804	10,53,974

* Represents the outlay incurred on new head locks, Bobberlanka and Vijeswaram.

B.—Statement showing the navigation receipts for the official year 1891–92.

Particulars.	OFFICIAL YEAR 1890–91.					OFFICIAL YEAR 1891–92.				
	Class.	Total number.	Measured tonnage licensed at 50 cubic feet per ton.	Number of passengers licensed to carry.	Amount of license fees and tolls.	Class.	Total number.	Measured tonnage licensed at 50 cubic feet per ton.	Number of passengers licensed to carry.	Amount of license fees and tolls.
					RS.					RS. A. P.
License fees for Government boats.	..	79	2,208	..	5,520	..	64	1,883	..	4,707 0 0
Do. for steamers and dredges..	..	..	..	..	..	..	2	55	..	275 0 0
Do. for staff boats	1st	12	..	..	144	1st	13	..	..	156 0 0
Do. for jolly do.	2nd	3	..	..	3	2nd	3	..	..	3 0 0
Do. for cargo do.	..	571	13,846	..	29,529	..	641	15,287	..	33,184 8 0
Do. for passenger boats ..	1st	..	..	..	..	..	..	..	..	..
Do. for do. ..	2nd	81	1,501	3,728	3,844	2nd	82	1,554	3,987	4,067 0 0
Do. for miscellaneous including private and pleasure boats and duplicate license fees	..	48	..	..	343	..	45	..	..	393 0 0
Tolls on Government steamers, &c.	..	..	..	..	..	..	..	..	..	123 0 0
Do. on cargo boats	..	..	..	..	25,353	..	..	..	..	23,746 0 0
Do. on passenger boats ..	..	..	..	..	9,929	..	..	..	..	9,901 8 0
Do. on miscellaneous	..	..	..	..	149	..	..	..	..	120 0 0
Do. on dredges	..	..	..	..	55	..	..	..	..	..
Do. on rafts	..	..	..	..	15,372	..	..	..	..	17,118 7 0
Rents collected for staff boats ..	..	..	..	..	2,198	..	..	..	..	2,222 0 0
Fees collected for painting numbers on boats	..	..			249	..	..	..	..	270 10 0
Profit on boat office	..	..	..	..	3,912	..	..	..	..	..
Total ..	..	794	17,555	3,728	96,600	..	850	18,779	3,987	96,287 1 0

C.—Statement showing the total maintenance charges on navigable canals of the Godávari delta for the year 1891–92.

Description.	Total charges for 1891–92.	DEBITABLE TO NAVIGATION.		DEBITABLE TO IRRIGATION.	
		Rate.	Amount.	Rate.	Amount.
	RS.		RS.		RS.
1. Navigation establishment	23,463	Whole.	23,463	..	..
2. Locks and weirs, repairs	17,089	Do.	17,089	..	..
3. Navigation buildings	477	Do.	477	..	..
4. Tow path maintenance	1,136	Do.	1,136	..	..
5. Dredging	5,764	Do.	5,764	..	..
6. Share of canal maintenance	(a) 86,170	¼	21,543	¾	64,627
7. Repairs of staff boats	1,791	Whole.	1,791	..	..
8. Charges for painting numbers on boats	269	Do.	269	..	..
9. Miscellaneous including charges not appertaining to the first items general	(b) 5,647	¼	1,411	¾	4,236
Total ..	1,41,806	..	72,943	..	68,863

(a) This amount represents expenditure on the following items :—

(1) Repairs to canal banks (¼ of this is chargeable to Navigation).
(2) Silt clearances (do. do.).
(3) Mile and avenue coolies (do. do.).

(b) This item represents expenditure on repairs to masonry works other than locks and weirs (¼ of this is charged to Navigation).

D.—Memorandum showing the offences against Navigation Rules and Regulations during the official year 1891-92.

Nature and description of boats.	Rule No. 1 for plying on canal without a toll ticket or license.		Rule No. 7 for taking freight from passengers and then refusing to take them throughout the journey.		Rule No. 9 for conveying greater quantity of cargo than registered tonnage.		Rule No. 20 for not allowing sufficient free board.		Rule No. 21 for mooring boat on tow-path side.		Rule No. 22 for unloading cargo at locks, &c.		Rule No. 24 for repairing boats at unauthorized places.		Rules Nos. 20, 25 and 26 for not having sufficient free boards and mooring vessels within limits fixed by notice boards.		Rule No. 25 for mooring vessels within limits fixed by notice boards.		Rule No. 26 for not having a man in charge and for not having light and masts down when moored.		Rule No. 27 for not having a light on boat.		Rule No. 28 for not giving way to boats going up-current.		Rule No. 30 for not keeping boat clean and in proper repairs.		Rule No. 31 for interfering with lock-gearing, &c.		Rule No. 32 for not stopping when required to stop by duly authorized officer for examination.		Rule No. 33 for not having always ticket or license on board and for not producing it when called for by any duly authorized officer.	
	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.
Passenger boats ..	T. T. 26448	1	T. T. 28107	6	1712	8	T. T. 10249	15	T. T. 8892	2	1721	7	T. T. 19940	15	1730	15	T. T. 20050	3	1706	3	1742	7	T. T. 18385	1	T. T. 20192	3	T. T. 27062	1	T. T. 27010	3	T. T. 28013	2
....	,, 26582	7	..	..	1714	7	20191	15	..	..	T. T. 18867	10	..	..	1811	7	..	..	T. T. 18587	7	T. T. 18385	1	,, 19726	3	..	..	..	..	..	..	..	..
....	..	..	..	..	1739	7	1714	10	..	..	,, 26696	3	..	..	..	..	..	..	,, 18583	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	1707	7	T. T. 20178	10	..	..	,, 26838	4	..	..	..	..	..	..	,, 18568	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	1715	7	,, 26704	9	..	..	,, 18883	2	..	..	..	..	..	..	,, 17978	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	1719	7	,, 27010	4	..	..	..	..	..	..	..	..	..	..	,, 17987	5	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	T. T. 19947	7	L. 8	2	..	..	..	..	..	..	..	..	..	..	,, 17987	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	,, 19928	7	,, 1734	2	..	..	..	..	..	..	..	..	..	..	,, 17991	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	,, 19896	7	..	..	..	..	..	..	..	..	..	..	..	..	,, 18000	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	,, 19898	10	..	..	..	..	..	..	..	..	..	..	..	..	,, 18476	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18488	5	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18499	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18503	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18552	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18555	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18559	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18560	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18565	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18566	7	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18646	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 17626	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26326	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 17645	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	L. 814	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T. T. 26388	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26385	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26356	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 14394	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26367	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26353	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26394	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26356	4	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26462	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26456	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26460	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26444	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26632	2	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	L. 184	3	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T. T. 26462	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26465	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26466	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 26447	1	..	..	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 18892	2	..	..	..	..	..	..	..	..	..	..	..	..
Cargo boats ..	..	..	..	..	..	..	L. 2672	10	L. 2644	2	2877	5	..	..	..	..	2492	3	L. 2644	3	..	..	..	..	..	..	..	..	L. 2644	2	T. T. 20278	3
....	..	..	..	..	..	..	..	..	,, 2747	2	2626	1	..	..	..	..	2724	3	,, 2747	2	..	..	..	..	..	..	..	..	..	..	,, 13259	3
Rafts	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T. 15672	Fine Re. 1	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 15673	,, ,,	..	..	..	..	..	..	..	..	..	..
....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	,, 15674	,, ,,	..	..	..	..	..	..	..	..	..	..

No. 187 I.

Submitted to Government.

OOTACAMUND, 4th Nov. 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Acting Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 14th November 1892, No. 947 I., Public Works.

Recorded.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 14th.

Recd. *Encl.*

G.O., 14th Nov. 1892, No. 947 I.

NOVEMBER.

Godavari System of Canals

Statements showing navigation receipts and charges of the — for 1891–92, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 29th October 1892, No. 1628 G.D.

With reference to your telegram, No. 74, dated the 24th instant, I have the honour to submit, herewith, copy of a letter, No. 475 S., dated the 26th October 1892, received from the Executive Engineer, Godávari Eastern division, and to request that you will be so good as to arrange for the whole amount of Rs. 31,076 now available being allotted to the Godávari Eastern division as detailed in the Executive Engineer's letter.

2. This application cancels the request for additional allotment of Rs. 6,000 made in the application forwarded with my letter, No. 359 G.L., dated the 25th September 1892, and the transfer of Rs. 5,980 proposed in para. 1 of my letter No. 406 G.L. of the 12th instant.

Enclosure.

From C. MITFORD SMITH, Esq., A.M.I.C.E., Executive Engineer, Godávari Eastern division, to the Superintending Engineer, I Circle, dated Dowlaishweram, 26th October 1892, No. 475 S.

With reference to your letter, No. 1585 G.D. of 25th October 1892, I have the honour to bring to your notice that the transfer of Rs. 5,980 from the existing grant under "42. Extensions and Improvements and Tools and Plant" was only proposed as necessary to meet the excess expenditure incurred under "42. Maintenance and Repairs."

2. Now that additional funds are available, the transfer proposed in this office No. 437 S. of 5th October 1892 may be considered cancelled.

3. I would request that the whole amount telegraphed as available may be allotted to this division as follows :—

	RS.
42. Major Works (Working Expenses)—	
1-B. Maintenance and repairs	20,000
1-A. Extensions and improvements	1,076
Tools and plant	10,000
Total ...	31,076

4. The sum of Rs. 20,000 applied for under "Maintenance and Repairs" includes the sum of Rs. 6,000 which has already been applied for for the special work, "Raising banks in connection with anicuts and head works," carried out this year (*vide* application for increase of allotments, dated 23rd September 1892). The amount is arrived at as follows.

	RS.
Excess expenditure up to date including liabilities incurred by Delta Sub-divisional officer in anticipation of additional allotment of funds	11,000
Salaries of canal coolies and gumastas proposed to be re-entertained.	1,700
Dredging at head of Sámalkót canal and opposite inlets at Vetlapalem to be done before 31st March 1893	1,000
Dredging in front and rear of Dowlaishweram head lock and locks on Cocanada to be done before 31st March 1893	1,000
Collection of materials for repairs of masonry works in the Delta sub-division to be carried out during the next closure	1,300
Maintenance of anicuts and head works for season 1893, first part including value of materials	3,000
Closing breaches in Sámalkót canal between Venkatakistnapuram and Cocanada locks	1,000
Total ...	20,000

5. The sum of Rs. 1,076 applied for under "Extensions and Improvements" is for "Excavating a new channel from Jaganaikpur channel and constructing a regulator at the head of Municipal channel," Cocanada canal, estimate Rs. 3,440, sanctioned in G.O., No. 54 I., dated 19th January 1892. Funds for collection of materials for the regulator and for payment of land compensation to be settled by the Revenue Department before 31st March 1893 cannot be met from the existing grant for "Minor Works"; hence application for special grant.

6. As regards tools and plant, it appears that work has already been done to the extent of the existing grant. Some wooden and iron punts have lately been hauled up for repairs and it is desirable that they should be put in hand directly the estimates are sanctioned. I request that you will recommend the sanction of additional grant of Rs. 10,000 applied for under this head, as the repairs cannot be postponed until next official year. I may mention that one-fifth of the grant goes towards the adjustment of centage sanctioned for workshop work in G.O., No. 2892 W., dated 29th October 1891.

No. 186 I.

Submitted to Government.

2. The additional allotment and transfer of funds under 42. Major Works (Working Expenses) applied for in the Superintending Engineer's letters, Nos. 359 G.L., dated 25th September 1892, and 406 G.L., dated 12th October 1892, have already been sanctioned. The following allotments are now required to complete the demands made by the Executive Engineer of the Godávari Eastern division :—

	RS.
Extensions and improvements	2,076
Maintenance and repairs	9,000
Establishment	2,547
Tools and plant	14,920
Total ...	28,543

The present balance of reserve is Rs. 22,150 to which may be added the following sums surrendered by the Superintending Engineer, V Circle, in his letter, No. 317 E.I., dated 20th October 1892, owing to want of sanctioned estimates :—

Cauvery Delta System.
Extensions and Improvements.

	RS.
Negapatam—	
Odemboghiyar head sluice	6,000
Minor extensions and improvements	2,000
Tanjore—	
Minor extensions and improvements	2,500
	10,500
Establishment	2,415
Total ...	12,915

The total amount available is Rs. 35,065, from which Rs. 28,543 required for the Godávari Eastern division may be appropriated, leaving a balance of Rs. 6,522 still available to meet future demands.

3. It must be noted that the Executive Engineer of the Godávari Eastern division does not seem to have regulated expenditure under this head by the budget grants.

OOTACAMUND, 9th Nov. 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Acting Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 14th November 1892, No. 948 I., Public Works.

The following transfers of funds are sanctioned:—

Imperial.
42. Major Works (Working Expenses).

From Cauvery Delta. Extensions and Improvements.	RS.	*To* Godávari Delta. Eastern Division.	RS.
Negapatam division—		Extensions and improvements ...	2,076
Odemboghiyar head sluice ...	6,000	Maintenance and repairs	9,000
Minor extensions and improvements	2,000	Establishment	2,547
Tanjore division—		Tools and plant	14,920
Minor extensions and improvements	2,500		
Establishment	2,415		
	12,915		
Reserve	15,628		
Total ...	28,543	Total ...	28,543

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle.
„ „ „ V „
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.
PUBLIC WORKS.

Dated November, 14th.

Recd. *Encl.*

G.O., 14th Nov. 1892, No. 948 I.

NOVEMBER.

Funds

Certain transfers of — proposed by the Chief Engineer for Irrigation for the Godávari Eastern division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 12th October 1892, No. 641 T.N.

I have the honour to submit, for your approval and sanction of Government, an estimate, amounting to Rs. 8,070, accompanied by plans and report, for improving Vembakottai-Periyákulam tank (No. 34 A. in the list of Imperial Works) in the Sátúr taluk, Tinnevelly district.

2. It would appear from the report attached to the estimate that the requirements of the tank have been fully ascertained and the works estimated for are absolutely necessary to render the tank safe and efficient.

3. The rates entered in the estimate are fair. I request sanction also to the entry of the work in the ensuing year's budget.

Submitted to Government with the recommendation that the estimate amounting to Rs. 8,040 as altered in this office may be sanctioned.

2. The rate of 7½ annas per cubic yard for building rough-stone revetment appears to be exorbitant, 3 annas per cubic yard being considered ample.

3. The original estimate does not appear to have been carefully prepared.

OOTACAMUND, 7th November 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 14th November 1892, No. 949 I., Public Works.

The following estimate is sanctioned :—

Provincial—43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P. W. D.
Tinnevelly Division.
Original Works.
Vembakottai-Periyákulam tank (No. 34 A. of the list of works issued with G.O., No. 407 I., dated 6th July 1887).

	RS.
Reparing bund	4,400
Revetment	1,560
Head sluice	800
Sluice No. 2, reconstructing	760
" " 3, improving	380
" " 4, reconstructing	140
Total	8,040

2. This sanction is registered as No. 130 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle, with 20 enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 14th.

Recd. *Encl.*

G.O., 14th Nov. 1892, No. 949 I.

NOVEMBER.

Vembakottai-Periyakulam Tank

Estimate of Rs. 8,040 for improving the — in the Tinnevelly division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

STATEMENT showing the redistribution of allotments, Irrigation, for 1892–93.

Division.	Main head.	Sub-head.	Number of items.	Names of works.	Amount of estimate.	Existing grant for 1892–93.	Modification of allotment applied for — Reduction.	Modification of allotment applied for — Increase.	Proposed grant.
1	2	3	4	5	6	7	8	9	10
				Capital expenditure on Public Works not charged to Revenue 49. Irrigation.	RS.	RS.	RS.	RS.	RS.
No. I Periyár.	I. Works.	C. Works ..	1	Main dam in the Periyár valley	6,91,000	2,00,000	..	1,00,000	3,00,000
			2	Right bank escape ..	1,37,000	50,000	..	15,000	65,000
			3	Water-shed tunnel ..	2,39,095	50,000	..	15,000	65,000
			4	Water-shed cutting ..	1,20,000	24,000	..	6,000	30,000
			5	Left bank escape	34,000	10,000	10,000	..	..
				Total, C. Works ..	..	3,34,000	10,000	1,36,000	4,60,000
		K. Buildings ..	1	Water-supply at Periyár ..	3,000	2,000	..	..	2,000
			2	Conservancy of camps for 1892–93	6,700	6,500	..	200	6,700
			3	Constructing new rice bazaar, Periyár	2,800	..	..	2,800	2,800
				Minor works	..	7,000	..	19,000	26,000
				Total, K. Buildings ..	..	15,500	..	22,000	37,500
		O. Miscellaneous.	1	Police escort charges to accompany treasury from Periyakulam to Periyár ..	3,252	900	..	..	900
			2	Reconstructing No. III dam.	3,970	..	..	360	360
			3	Constructing a gunny-bag bund below wharf at Mulyapanjan	3,140	..	..	3,140	3,140
				Minor works	..	7,000	..	3,500	10,500
				Total, O. Miscellaneous ..	..	7,900	..	7,000	14,900
		P. Maintenance.	1	Maintenance of Branch road from Kumili to Periyár ..	2,830	2,600	..	5,400	8,000
			2	Closing breach near Kumili reservoir	..	..	..	8,000	8,000
				Minor works	..	6,000	..	..	6,000
				Total, P. Maintenance ..	..	8,600	..	13,400	22,000
				Grand Total, Works ..	..	3,66,000	10,000	1,78,400	5,34,400
	II. Establishment.			Establishment, viz., 23 per cent. on works	..	84,180	..	38,732	1,22,912
	III. Tools and Plant.			Tools and Plant	..	30,820	..	20,668	51,488
				Grand Total ..	..	4,81,000	10,000	2,37,800	7,08,800
							Net 2,27,800		..

No. 177 C.E.

Submitted to the Chief Engineer, Public Works Department, for sanction with reference to his telegram, dated 25th October 1892.

PERIYAR,
1st November 1892.

(Signed) W. B. DEWINTON,
Supt. of Works, No. I Periyár division.

Submitted to Government.

2. The figures in column "Existing grant for 1892–93" have been altered so as to include the sum sanctioned in G.O., No. 822 I. of 5th October 1892, and the sum proposed for expenditure on Tools and Plant has been increased by Rs. 786 to work up to the total existing grant of Rs. 7,08,800 for the division.

(Signed) G. T. WALCH,
Chief Engineer, P.W.D.

ORDER—dated 16th November 1892, No. 960 I., Public Works.

The statement of redistribution of the grant for the No. I Periyár division, as altered by the Chief Engineer, Public Works Department, is approved.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Superintendent of Works, No. I Periyár division.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 16th.

Recd. *Encl.*

G.O., 16th Nov. 1892, No. 960 I.

NOVEMBER.

Periyar Project

Grant.—Statement showing redistribution of the — for the No. I Periyár division, for 1892–93, as altered by the Chief Engineer, Public Works Department, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Lieut.-Colonel A. C. SMITH, R E., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, dated Trichinopoly, 23rd October 1892, No. 338 P.R.

I have the honour to forward, for the sanction of Government, the completion report for constructing 5th superpassage or 7th cross drainage work in the 3rd Reach of the Main channel in No. II Periyár division, Periyár project.

2. The revised estimate for the work, amounting to Rs. 13,500, was sanctioned in G.O., No. 242 I., dated 22nd April 1890, and the work was completed in March 1892 at an outlay of Rs. 15,756–15–8.

3. The excess of Rs. 2,257 or 16·71 per cent. over the estimate has been due to the following causes :—

	Excess. RS.
(*a*) Increased rate given for coursed rubble, first sort, set in mortar (archwork)	277
(*b*) Inadequate provision in the estimate for roughly dressed ashlar	84
(*c*) Very heavy springs met with in baling and to drainage channel not having been contemplated in the estimate (work was proceeded with quickly up to water level and no unnecessary baling charge was incurred)	2,124
(*d*) Presence of rock in excavating foundation	2,621
(*e*) Actual cost in contingencies	172
Total ...	5,278
Deduct savings in the items of coursed rubble, first sort, set in mortar, dressed ashlar, and rubble or rough stone dry (owing to presence of rock) and diversion of the odai	3,021
Net excess ...	2,257

4. The completion report has been duly verified by the Examiner of Public Works Accounts, and the excess outlay, being over 5 per cent., requires the sanction of Government.

5. I have also to submit for sanction the following extract from the completion statements of No. II Periyár division for the months of July and August 1892.

Item No.	Name of work.	Amount of estimate.	Authority sanctioning the estimate.	Outlay.	Excess over the estimate.
		RS.		RS.	RS.
1	No. 3 fall, 3rd branch channel	770	G.O., No. 50 I. of 23rd January 1888.	994	224
2	Training the drainage channel through No. 3 masonry work, 2nd Reach.	482	Superintending Engineer's Register No. 78 of 1891–92.	509	27
3	Maintenance and repairs to earthwork and masonry in 3rd Reach.	655	Superintending Engineer's Register No. 29 of 1892–93.	708	53
4	No. II culvert at 21 miles 7 furlongs, 6th Reach.	4,300	G.O., No. 706 I., dated 2nd December 1890.	4,941	641
5	No. 7 fall, 3rd branch channel	670	G.O., No. 51 I., dated 23rd January 1888.	1,098	428
6	No. 3 fall at 7 furlongs 589 feet in Thandlay branch of 4th branch channel.	450	Superintending Engineer's Register No. 79 of 1891–92.	546	96
			Total ..	..	1,469
			Grand Total ..	..	3,726

6. The completion statements have also been duly verified by the Examiner, Public Works Accounts, but the excess in each case being over 5 per cent. of the sanctioned estimate, requires the sanction of Government.

ORDER—dated 16th November 1892, No. 961 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the expenditure incurred on the works referred to, the total excess of Rs. 3,726 being met from the balance of the amount reserved for unforeseen works of the Periyár project, which will then be reduced to Rs. 1,13,808.

2. This sanction is registered as No. 131 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, VI Circle, with two enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 16th.

Recd. *Encl.*

G.O., 16th Nov. 1892, No. 961 I.

NOVEMBER.

Periyar Project

Excess outlay.—The Examiner, Public Works Accounts, authorized to pass the — of Rs. 3,726 incurred on certain works in No. II Periyár division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

Telegram from the Chief Engineer for Irrigation, to the Superintending Engineer, I Circle, dated 12th November 1892, No. 76.

Please report what extra allotments under 42 are absolutely necessary to repair damages done to canals by recent cyclone.

Telegram from the Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated 13th November 1892, No. 70.

Your telegram No. 76. Rs. 5,000 required for repairs to damages by cyclone in addition to the 31,000, of which 6,000 has already been granted.

ORDER—dated 17th November 1892, No. 964 I., Public Works.

A sum of Rs. 5,000 required for repairing damages caused by recent cyclone to works in the Godávari delta, or Rs. 6,150 including the percentage charge for establishment, is appropriated from the reserve under 42. Major Works (Working Expenses). The balance still available is Rs. 372.

2. The following deferred telegram will be sent to the Superintending Engineer, I Circle :—

"Your telegram 70, 13th instant. Rs. 5,000 sanctioned for maintenance and repairs. Please report distribution by divisions."

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 17th.

Recd. *Encl.*

G.O., 17th Nov. 1892, No. 964 I.

NOVEMBER.

Godavari Delta

Telegram to the Superintending Engineer, I Circle, sanctioning Rs. 5,000 required for repairing damages to works in the —, caused by recent cyclone.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

No. 188 I.

Note by the Acting Chief Engineer for Irrigation.

The accompanying revised schedule of the Godávari delta works which remained to be carried out on 1st April 1890 under 49. Capital Expenditure not charged to Revenue is submitted to Government for approval. The schedule amounts to Rs. 1,04,633 or Rs. 3,363 more than the existing sanction. All the works have been practically completed, but in the case of a few works it is found necessary to keep the sanction open till the end of the current official year to admit of the settlement in the Revenue Department of claims for compensation for land taken up for the works.

2. The Superintending Engineer, I Circle, applied for an allotment of Rs. 5,009 to cover the expenditure already incurred and that to be incurred on the works during the current year as shown in the statement B attached to this note. The amount reserved in G.O., No. 886 I., dated 31st October 1892, to meet this demand may now be appropriated.

OOTACAMUND, 9th Nov. 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ENCLOSURE.

REVISED schedule of all works of the Godávari delta which remained to be carried out on the 31st March 1890 and the sums required to complete them.

Item number in the schedule printed with G.O., No. 148 I., dated 15th February 1892.	Classification of main and sub heads.	Names of works.	Amount sanctioned in G.O., No. 148 I., dated 15th Feb. 1892.	Expenditure: To end of July 1892.	Expenditure: Further expenditure.	Expenditure: Total.	Difference: Saving.	Difference: Excess.	Probable date of completion.
1	2	3	4	5	6	7	8	9	10
		(i) WORKS WHICH ARE NECESSARY FOR THE FULL DEVELOPMENT OF THE PROJECT BUT WHICH ARE NOT IN THEMSELVES REMUNERATIVE.	RS.	RS.	RS.	RS.	RS.	RS.	
		Central section.							
	(2) Main canals and branches—								
1	K. Buildings	Inspection shed, compensation for land	972	1,077	— 84	993	..	21	Completed.
1-A.	......	Establishment at 23 per cent.	224	248	— 20	228	..	4	Do.
			1,196	1,325	—104	1,221	..	25	
75	Tools and plant ..	Priestman's dredger, A size, and barge	14,270	16,120	160	16,280	..	2,010	Do.
		Total ..	15,466	17,445	56	17,501	..	2,035	
		(ii) WORKS WHICH ARE DIRECTLY REMUNERATIVE IN THEMSELVES.							
		Central section.							
	(2) Main canals and branches—	Main canal.							
2	I. Navigation	Bobberlanka lock	2,423	2,423	..	2,423	..	..	Do.
3	L. Earthwork	Main canal improvements	164	164	..	164	..	..	Do.
4	B. Land	Compensation for land	342	274	68	342	..	..	..
		Gunnaram canal.							
5	B. Land	Compensation for land	258	87	171	258	..	..	..
6	I. Navigation	Fender pile bridge at Ramachendrapur surplus weir	80	80	..	80	..	..	Completed.
8	B. Land	Ramachendrapur surplus weir channel, compensation for land.	832	192	640	832	..	..	..
9	I. Navigation	Gopálpur lock	—570	—570	..	—570	..	..	Completed.
10	Do.	Sakhinatipalli lock	—332	—332	..	—332	..	..	Do.
	(3) Distributaries—								
11	C. Works	Mattaparru channel head sluice	54	54	..	54	..	..	Do.
12	Do.	Malikipuram do. do.	—7	—7	..	—7	..	..	Do.
13	Do.	Sluice for direct irrigation, 14 miles 70 chains	62	62	..	62	..	..	Do.
14	Do.	Do. do. 45 do. 40 do.	83	83	..	83	..	..	Do.
15	Do.	Mori channel head sluice	11	11	..	11	..	..	Do.
16	Do.	Valankayalakodu channel head sluice	31	31	..	31	..	..	Do.
17	Do.	Antervedi channel head sluice	51	51	..	51	..	..	Do.
18	Do.	Kobbarithota do. do.	42	42	..	42	..	..	Do.
20	B. Land	Compensation for land to Kokirayala kodu	2	1	..	1	1	..	Do.
21	Do.	Branch from Bollitippa channel to irrigate high lands of Tatipaka	328	328	..	328	..	..	Do.
22	L. Earthwork	Do. do. do. ..	194	194	..	194	..	..	Do.

	(2) Main canals and branches—	Bank canal.							
23	B. Land	Compensation for land	1,114	1,211	70	1,281	..	167	31st March 1893.
	(3) Distributaries—								
24	B. Land	Do. for land taken up for Vadapalem channel ..	2,321	2,287	41	2,328	..	7	Do.
25	L. Earthwork	Excavating Vadapalem channel	2,532	2,532	..	2,532	..	..	Completed.
27	B. Land	Compensation for land	103	81	22	103	..	..	31st March 1893.
28	L. Earthwork	Extending Dontikurru channel	832	832	..	832	..	..	Completed.
29	B. Land	Compensation for land	150	..	150	150	..	..	31st March 1893.
30	L. Earthwork	Anatharam channel	— 71	— 71	..	— 71	..	..	Completed.
31	C. Works	Nimmakayala Kottapalli channel sluice	9	9	..	9	..	..	Do.
32	Do.	Dontikurru channel head sluice	108	108	..	108	..	..	Do.
33	Do.	Kandikuppa do. do.	122	122	..	122	..	..	Do.
34	Do.	Pallamkurru No. 2 channel head sluice	103	103	..	103	..	..	Do.
35	Do.	Vadapalem channel head sluice	90	90	..	90	..	..	Do.
36	Do.	Geddanapalli do. do.	112	105	..	105	7	..	Do.
37	Do.	Ainapuram and Kundaleswaram sluices	196	193	..	196	..	..	Do.
		Amalápuram canal.							
	(3) Distributaries—								
39	C. Works	Constructing Vanni Chintalapudi channel head sluice ..	403	403	..	403	..	..	Do.
40	Do.	Bandarlanka channel head sluice	92	92	..	92	..	..	Do.
41	Do.	Kunavaram do. do.	247	250	..	250	..	3	Do.
42	Do.	Saripalli do. do.	345	345	..	345	..	..	Do.
43	Do.	Dam at end of Vilasa channel	402	401	..	401	1	..	Do.
44	Do.	Challapalli channel sluice	113	113	..	113	..	..	Do.
45	Do.	Surasaniyam do.	73	73	..	73	..	..	Do.
46	Do.	Pedapudi do.	57	57	..	57	..	..	Do.
47	L. Earthwork	Extending Bhatnavelli channel	189	189	..	189	..	..	Do.
48	B. Land	Do. do. compensation for land ..	261	261	..	261	..	..	Do.
49	L. Earthwork	Excavating a parallel channel from 28th mile, Amalapuram canal.	489	489	..	489	..	..	..
50	B. Land	Do. do. compensation for land ..	200	388	12	400	..	200	31st March 1893.
51	L. Earthwork	Do. a channel to Vanni Chintalapudi lands from 35½ miles	65	65	..	65	..	..	Completed.
		Bendamurlanka canal.							
	(2) Main canals and branches—								
53	I. Navigation	Indupalli lock	— 509	— 509	..	— 509	..	..	Do.
54	Do.	Do. weir	48	— 57	16	— 41	89	..	31st March 1893.
55	H. Escape	Surplus weir at 37 miles 2 chains	2,012	2,052	..	2,052	..	40	Completed.
	(3) Distributaries—								
57	C. Works	Bodasakurru channel head sluice	53	53	..	53	..	..	Do.
58	Do.	Godilanka do. do.	326	326	..	326	..	..	Do.
59	Do.	Chenchula do. do.	271	305	..	305	..	34	Do.
60	Do.	Kowsika new irrigation channel sluice	133	133	..	133	..	..	Do.
61	Do.	Rellugedda channel head sluice	207	207	..	207	..	..	Do.
62	Do.	Allaram do. do.	12	12	..	12	..	..	Do.
	(4) Drainages and protective works—	Drainages.							
63	C. Works	Inlet No. 2, Panchanadi drain	86	39	..	39	47	..	Do.
64	Do.	Do. 1 do.	87	71	100	171	..	84	31st March 1893.
36	B. Land	Channel from Ralli surplus weir, compensation for land ..	(a) 1,765	849	916	1,765	..	..	..
67	L. Earthwork	Kunaram drain improvements	10	10	..	10	..	..	Completed.
68	B. Land	Compensation for land, Gorinkala drain	25	25	..	25	..	..	Do.

(a) Includes Rs. 992 sanctioned in G.O., No. 264 I., dated 11th March 1892.

Revised schedule of all works of the Godávari delta which remained to be carried out on the 31st March 1890 and the sums required to complete them—*cont.*

Item number in the schedule printed with G.O., No. 148 I., dated 15th February 1892.	Classification of main and sub heads.	Names of works.	Amount sanctioned in G.O., No. 148 I., dated 15th Feb. 1892.	EXPENDITURE. To end of July 1892.	EXPENDITURE. Further expenditure.	EXPENDITURE. Total.	DIFFERENCE. Saving.	DIFFERENCE. Excess.	Probable date of completion.
1	2	3	4	5	6	7	8	9	10
		Western section.	RS.	RS.	RS.	RS.	RS.	RS.	
		Main canal.							
69 and 69-A	(2) Main canals and branches— I. Navigation	Vijesweram lock	51,000	50,539	1,221	51,760	..	760	31st March 1893.
		Venkia and Wyeru canal.							
70	(3) Distributaries— C. Works	Articulated pipe to take water from Annayakodu irrigation channel extension across Addala creek	741	741	..	741	..	..	Completed.
		Gostanadi and Velpur canal.							
71	(2) Main canals and branches— B. Land	Compensation for land	371	371	..	371	..	..	Do.
		Eastern section.							
		Bank canal.							
72	(3) Distributaries— C. Works	No. 1 under-tunnel to Madiki channel over Kuchativalu ..	1	1	..	1	..	..	Do.
73	Do.	No. 2 do. do. over Dulla valu ..	2	2	..	2	..	..	Do.
74	Do.	Under-tunnel to carry Vakatippa channel under Matsara drain.	— 78	— 78	..	— 78	..	..	Do.
		Total ..	71,268	68,991	3,427	72,418	..	1,150	
		Establishment at 23 per cent ..	14,536	14,406	308	14,714	..	178	
		Total ..	85,804	83,397	3,735	87,132	..	1,328	
		Grand total ..	1,01,270	1,00,842	3,791	1,04,633	..	3,363	

ENCLOSURE B.

APPLICATION for allotment required for completion of works during 1892-93 under 49. Major Works—Construction.

Consecutive number of items.	Number of items in the schedule with G.O., No. 148 I. of 15th February 1892.	Classification.	Name of work.	Amount of estimate.	Outlay to end of March 1892.	Grant required for 1892-93.
			CENTRAL SECTION.	RS.	RS.	RS.
		(2) Main canals and branches—	*Main Canal.*			
1	4	B. Land	Compensation for land	342	274	68
		(2) Main canals and branches—	*Gunnaram canal.*			
2	5	B. Land	Compensation for land	258	87	171
3	8	Do.	Compensation for land excavating Ramachendrapur surplus weir channel	832	192	640
		(2) Main canals and branches—	*Bank canal.*			
4	23	B. Land	Compensation for land	1,114	1,211	70
		(3) Distributaries—				
5	24	B. Land	Compensation for land taken up f Vadapalli channel	2,321	2,219	109
6	27	Do.	Compensation for land for Pallamkurru No. 2 channel	103	51	52
7	29	Do.	Compensation for land for Dontikurru channel	150	..	150
		(2) Main canals and branches— (3) Distributaries—	*Amalapur canal.*			
8	50	B. Land	Compensation for land for channel from 28th mile, Amalapur canal ..	200	360	40
		(4) Drainage and Protective works—	*Drainages.*			
9	64	C Works	Inlet No. 1, Panchanadi drain ..	87	71	100
10	66	B. Land	Excavating channel from Ralli surplus weir to Gorinkala drain compensation.	* 1,765	848	917
		(2) Main canals and branches—	*Bendamurlanka canal.*			
11	54	I. Navigation ..	Indupalli weir	48	— 66	25
			WESTERN SECTION.			
		(2) Main canals and branches—	*Main canal.*			
12	69	I. Navigation ..	Vijesvaram lock	51,000	49,952	† 1,808
						4,150
			Establishment at 23 per cent. ..	..	..	445
						4,595
13	75	Tools and plant ..	Priestman's dredger "A" size and barge	14,270	15,866	414
			Total ..	..	..	5,009

* Corrected as per G.O., No. 244 I., dated 11th March 1892.

	RS.
† Land compensation	1,200
Other liabilities	608
Total ..	1,808

(Signed) G. D. WYBROW,
Superintending Engineer, I Circle.

ORDER—dated 18th November 1892, No. 965 I., Public Works.

The revised schedule of the Godávari delta works which remained to be carried out on 1st April 1890 under 49. Capital Expenditure not charged to Revenue, submitted by the Acting Chief Engineer for Irrigation, is approved.

2. The sum of Rs. 5,009 reserved under 49. Capital Expenditure not charged to Revenue in G.O., No. 886 I., dated 31st October 1892, is appropriated to the Godávari delta.

3. Ordered that a copy of these Proceedings be forwarded to the Government of India with the request that sanction may be accorded to the revised schedule in lieu of the one sanctioned in its letter No. 55 I., dated 11th March 1892, printed in Proceedings of the Madras Government No. 305 I., dated 24th idem.

(Here enter No. 966 I., Public Works, dated 18th November 1892.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, I Circle.
,, Examiner, Public Works Accounts.
,, Revenue Department.
Editors' Table.

ENDORSEMENT—dated 18th November 1892, No. 966 I., Public Works.

Forwarded accordingly.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 18th.

Recd. *Encl.*

G.O., 18th Nov. 1892, Nos. 965, 966 I.

NOVEMBER.

Godavari Delta Works

Forwarding, for sanction, copy of Proceedings approving of the revised schedule of the — which remained to be carried out on 1st April 1890 under 49. Capital Expenditure not charged to Revenue.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 25th October 1892, No. 702.

Read—again Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 11th October 1892, Mis. No. 8007.

Read—also letter from the Collector of Anantapur, dated 8th October 1892, Dis. No. 383.

ABSTRACT.—Submitting revised comparative statement of irrigation for 1891–92.

Read—also letter from the Collector of North Arcot, dated 12th October 1892, Ref. No. 2639-Board.

ABSTRACT.—Submitting comparative statement of irrigation and rainfall for the years 1890–91 and 1891–92.

Resolution—dated 25th October 1892, No. 702.

The Board resolves to forward to the Chief Enigneer for Irrigation the comparative statement of irrigation and rainfall for the official year 1891–92.

2. The year 1891–92 was more disastrous than its predecessor. Excluding the two West Coast districts and Nílgiris where there are no irrigation works and excluding also the Madras district where the lands are charged with quit-rent, the average rainfall for the rest of the Presidency was only 24·92 inches against 32·12 inches registered in 1890–91 and 35·80 inches, the average of five years ending 1889–90. Under the south-west monsoon the average fall was only 12·12 inches against 20·30 inches, the average of the preceding year. The north-east monsoon was also generally deficient and registered only 12·80 inches, or nearly the same as in the previous year and 8 per cent. below the average of the previous five years. The result of this failure, following a previous bad season, led to a large reduction in the cultivated area and to a considerable loss of crops, both wet and dry, in several districts. Relief works on a large scale had also to be opened in many of the districts to provide employment to the laboring population.

3. The Godávari began to rise in July, attaining the maximum height of 16·9 feet over the crest of the anicut on the 3rd October 1891. The floods caused breaches in the embankment of the rivers and channels and damaged the standing crops to the extent of about a lakh of rupees. The freshes, however, rapidly subsided and stood only 4·9 feet over the anicut on the 6th October 1891. The Kistna was in fresh early in June, and in the latter part of that month stood at 3·50 feet over the crest of the anicut. It rose highest in the middle of July to 14·83 over the anicut against 8·4 in the previous year. In Nellore the freshes in the Pennér, which is largely fed by the drainage of the Cuddapah and Anantapur districts, which suffered severely from the deficient rainfall of the year, were unusually scanty. The Sangam and Nellore anicuts caught what little water there was, but the stored amount was trifling. In the deltaic tracts of the district there was a serious failure of the crops irrigable from the channels

under the anicuts and extensive remissions had to be granted. The Cauvery began to rise in Trichinopoly in July and the highest flood was 8·5 feet in October. It fell with unusual rapidity in January and was nearly dry by the middle of the month.

4. The area actually irrigated from Government sources under first and second crop in the official years 1890–91 and 1891–92 is exhibited in the subjoined table :—

Items.	Anicut and other important works, classes I and II.		Other works, classes III and IV.		Total.		Difference.
	1890–91.	1891–92.	1890–91.	1891–92.	1890–91.	1891–92.	
	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.
Government land ..	1,930,110	1,944,437	2,401,223	2,138,625	4,331,333	4,083,062	— 248,271
Inam land	456,614	479,792	439,372	364,775	895,986	844,567	— 51,419
Zemindari land ..	242,859	263,060	59,992	63,920	302,851	326,980	+ 24,129
Total ..	2,629,583	2,687,289	2,900,587	2,567,320	5,530,170	5,254,609	— 275,561
Difference ..	..	+ 57,706	..	— 333,267	..	— 275,561	..

5. As compared with the previous year, there was an increase of nearly 57,800 acres under class I and II works, resulting from a gross increase of acres 133,000 under the Kurnool-Cuddapah canal and the Godávari, Kistna, Srívaikuntham, Marudúr, Pelandorai, Vriddháchalam and Tirukoilúr anicuts and the Tadapalli, Arakankotai, Kalingaroyen channels and a gross decrease of 75,200 acres in the remaining works falling under these classes as shown on the margin. The increase under the Kurnool-Cuddapah canal and the Godávari, Kistna and Srívaikuntham anicuts was large and amounted to 37, 35, 12 and 9 per cent., respectively. Under the first named work it was due to the free use of canal water owing to the extreme scantiness of the rainfall. In the case of the Godávari anicut, the unusual flood in the month of October caused considerable damages to the first crop and the ryots were induced in consequence of the damages and of the general rise in the price of food-grains to raise a second crop on large areas. The increase under the Kistna anicut is attributed to water having been taken for large areas of dry crops owing to deficient rainfall, and that under the Srívaikuntham anicut to the favorable character of the season. The increase under the other works is small and calls for no remark. The decrease occurred chiefly under the Pennér, Sangam and Pálár anicuts, amounting to 14, 15 and 21 per cent., respectively, and was due to unfavorable season.

	Decrease.	Increase.
	ACS.	ACS.
Godávari	..	46,127
Kistna	..	16,172
Pennér	10,522	..
Sangam	11,495	..
Kurnool-Cuddapah canal	..	49,111
Cumbum tank	4,509	..
Chembiambakam tank	2,997	..
Madras Water-supply and Irrigation Extension Project	3,818	..
Vallur anicut	748	..
Pálár	15,774	..
Cheyár	3,653	..
Ponney	6,411	..
Pelandorai	..	131
Lower Coleroon	7,285	..
Shatyatope	1,773	..
Vriddháchalam	..	7
Mehamatur	60	..
Tirukoilúr	..	1,474
Cauvery	5,806	..
Srívaikuntham	..	12,496
Marudúr	..	5,683
Tadapalli	..	569
Arakankotai	..	27
Kalingaroyen	..	1,128
Barur	368	..
Total ..	75,219	132,925

6. Under class III and IV works there was a decrease of 333,000 acres which appears in all the districts, except South Arcot, Tanjore, Madura, Tinnevelly and Coimbatore, where the season of the year under review was more favorable than in the previous year. Sixty per cent. of the gross increase of acres 44,800 occurred in Tinnevelly; South Arcot followed with 21 per cent. and Madura with 13 per cent. The decrease was large in North Arcot, Cuddapah, Chingleput, Godávari, Vizagapatam, Anantapur, Salem and Kurnool, amounting to 17, 16, 14, 11, 10 and 9 per cent., respectively, and was attributable to unfavorable season.

(A true Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

APPENDIX I.

Districts.	Average of 5 years ending 1890–91.		1890–91.		1891–92.	
	South-west monsoon.	North-east monsoon.	South-west monsoon.	North-east monsoon.	South-west monsoon.	North-east monsoon.
Ganjam	29·72	18·09	28·68	17·45	28·60	3·14
Vizagapatam	36·97	13·47	37·93	12·09	28·33	2·67
Godávari	28·81	12·56	31·20	10·04	22·64	1·08
Kistna	23 92	10·62	20·84	11·07	18·19	2·49
Nellore	12·65	20·93	11·02	14·79	7·65	9·34
Cuddapah	16·97	12·30	12·71	9·05	9·71	4·46
Anantapur	17·05	8·17	11·86	9·00	6·39	4·47
Bellary	17·04	6·77	14·85	9·43	7·25	2·67
Kurnool	22·49	7·49	23·58	5·48	11·59	3·20
Chingleput	20·88	25·36	19·60	11·36	8·08	21·34
North Arcot	21·25	17·74	19·68	12·40	10·87	15·49
South Arcot	21·68	22·59	19·98	16·60	9·33	27·90
Tanjore	19·53	27·14	18·00	22·49	8·69	38·01
Trichinopoly	18·47	16·03	17·43	19·32	9·26	18·38
Madura	13·65	17·60	12·45	17·91	6·79	26·49
Tinnevelly	7·59	20·07	5·52	17·25	6·03	27·55
Coimbatore	14·21	10·96	11·62	14·07	8·12	12 98
Salem	22·58	11·80	18·98	12·32	10·61	8·85
Average ..	20·30	15·50	18·66	13·46	12·12	12·80

APPENDIX II.

Months.	Rainfall.		
	Average of 5 years ending 1890–91.	1890–91.	1891–92.
April	0·92	1·19	0·65
May	2·39	1·34	1·43
June	3·14	3·89	1·72
July	3·94	3·37	2·02
August	4·92	4·12	3·10
September	4·99	4·75	3·20
Total of South-west monsoon ..	20·30	18·66	12·12
October	7·40	6·25	7·01
November	4·87	4·15	2·37
December	2·30	0·80	3·07
January	0·16	0·35	0·04
February	0·28	1·10	0·27
March	0·49	0·81	0·04
Total of North-east monsoon ..	15·50	13·46	12·80
Total for the year ..	35·80	32·12	24·92

APPENDIX III.

COMPARATIVE statement of Irrigation and Rainfall for the years 1890–91 and 1891–92 in the several districts of the Madras Presidency.

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Areas irrigated.										Rainfall.			
					Sown from April to November 1891, *i.e.*, 1st crop.			Sown from December 1891 to March 1892, *i.e.*, 2nd crop.			Whole year, 1891–92.			Percentage of increase or decrease in 1891–92.	Monsoon.	1890–91.	1891–92.	Percentage of increase or decrease in 1891–92.
					Total acres.	In comparison with 1890–91.		Total acres.	In comparison with 1890–91.		Total acres.	In comparison with 1890–91.						
						Increase.	Decrease.		Increase.	Decrease.		Increase.	Decrease.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Ganjam.					ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
	Government land ..	2,610,344	439,099	379,110	155,893	2,794	..	7,106	..	3,857	162,999	..	1,063	— 0·65	..	..	..	..
	Inam land	156,405	140,641	106,855	36,028	..	4,808	1,990	..	195	38,018	..	5,003	— 11·63	South-west monsoon.	28·68	28·60	— 0·28
	Zemindari land ..	2,589,411	846,968	60,735	10,042	..	..	..	..	..	10,042	..	..	..	North-east monsoon.	17·45	3·14	— 82·01
	Total ..	5,356,160	1,426,708	546,700	201,963	..	2,014	9,096	..	4,052	211,059	..	6,066	— 2·79	..	46·13	31·74	— 31·19
	Vizagapatam.																	
	Government land ..	878,742	123,266	103,675	16,810	..	19,612	913	..	2,229	17,723	..	21,841	— 55·20	..	..	..	..
	Inam land	146,784	89,849	40,867	12,700	..	8,005	302	..	2,006	13,002	..	10,011	— 43·50	South-west monsoon.	37·93	28·33	— 25·31
	Zemindari land ..	10,009,354	..	10,187	6,000	..	7,654	..	..	..	6,000	..	7,654	— 56·06	North-east monsoon.	12·09	2·67	— 77·91
	Total ..	11,034,880	213,115	154,729	35,510	..	35,271	1,215	..	4,235	36,725	..	39,506	— 51·82	..	50·02	31·00	— 38·02
	Godavari.																	
Godávari anicut.	Government land ..	..	..	..	311,007	9,163	..	37,233	16,938	..	348,240	26,101	..	+ 8·10	..	..	..	..
	Inam land	..	..	..	166,659	35	..	26,255	11,171	..	192,914	11,206	..	+ 6·17	..	..	..	..
	Zemindari land ..	..	..	..	139,770	116	..	20,213	8,704	..	159,983	8,820	..	+ 5·83	..	..	..	..
	Total ..	..	..	..	617,436	9,314	..	83,701	36,813	..	701,137	46,127	..	+ 7·04	..	..	..	..
Other works.	Government land ..	..	..	..	32,654	..	26,483	1,785	..	1,501	34,439	..	27,984	— 44·83	..	..	..	..
	Inam land	..	..	..	14,976	..	8,757	1,147	..	903	16,123	..	9,660	— 37·47	..	..	..	..
	Zemindari land ..	..	..	..	3,848	..	3,458	5	..	862	3,853	..	4,320	— 52·86	..	..	..	..
	Total ..	..	..	..	51,478	..	38,698	2,937	..	3,266	54,415	..	41,964	— 43·54	..	..	..	..

Total ..	Government land ..	2,442,742	1,092,246	708,550	343,661	..	17,320	39,018	15,437	..	382,679	..	1,883	− 0·49	..	..	..	..
	Inam land ..	549,126	477,884	379,564	181,635	..	8,722	27,402	10,268	..	209,037	1,546	..	+ 0·75	South-west monsoon.	31·20	22·64	−27·44
	Zemindari land ..	2,037,540	824,152	476,434	143,618	..	3,342	20,218	7,842	..	163,836	4,500	..	+ 2·82	North-east monsoon.	10·14	1·08	−89·34
	Total ..	5,029,408	2,394,282	1,564,548	668,914	..	29,384	86,638	33,547	..	755,552	4,163	..	+ 0·55	..	41·34	23 72	−42·62
	Kistna.																	
Kistna aniout.	Government land ..	..	..	..	277,649	5,578	..	63	..	189	277,712	5,389	..	+ 1·98	..	..	..	..
	Inam land ..	..	..	..	78,122	1,003	..	216	..	749	78,338	254	..	+ 0·33	..	..	..	..
	Zemindari land ..	..	..	..	101,165	10,350	..	193	179	..	101,358	10,529	..	+11·59	..	..	..	..
	Total ..	..	..	..	456,936	16,931	..	472	..	759	457,408	16,172	..	+ 3·67	..	..	..	..
Other works.	Government land ..	..	..	..	24,199	..	6,298	585	..	1,644	24,784	..	7,942	−24·27	..	..	..	..
	Inam land ..	..	..	..	3,089	..	1,340	50	..	564	3,139	..	1,904	−37·75	..	..	..	..
	Zemindari land ..	..	..	..	4,045	..	48	1,081	..	15	5,126	..	63	− 1·21	..	..	..	..
	Total ..	..	..	..	31,333	..	7,686	1,716	..	2,223	33,049	..	9,909	− 23·07	..	..	..	..
Total ..	Government land ..	3,488,145	2,334,945	1,638,265	301,848	..	720	648	..	1,833	302,496	..	2,553	− 0·84	..	..	..	..
	Inam land ..	794,050	641,465	464,066	81,211	..	337	266	..	1,313	81,477	..	1,650	− 1·99	South-west monsoon.	20·84	18·19	−12·72
	Zemindari land ..	1,115,032	296,910	182,107	105,210	10,302	..	1,274	164	..	106,484	10,466	..	+10·90	North-east monsoon.	11·07	2·49	−77·51
	Total ..	5,397,227	3,273,320	2,284,438	488,269	9,245	..	2,188	..	2,982	490,457	6,263	..	+ 1·29	..	31·91	20·68	−35·19
	Nellore.																	
Pennér aniout.	Government land ..	..	..	..	33,551	..	5,210	8,338	..	3,078	41,889	..	8,288	−16·52	..	..	..	..
	Inam land ..	..	..	..	8,187	..	1,418	3,529	..	816	11,716	..	2,234	−16·01	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	41,738	..	6,628	11,867	..	3,894	53,605	..	10,522	−16·41	..	..	..	..
Sangam anicut.	Government land ..	..	..	..	41,825	..	3,278	4,789	..	4,859	46,614	..	8,137	−14·86	..	..	..	..
	Inam land ..	..	..	..	6,516	..	2,929	2,750	..	429	9,266	..	3,358	−26·60	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	48,341	..	6,207	7,539	..	5,288	55,880	..	11,495	−17·06	..	..	..	..
Other works.	Government land ..	..	..	..	63,938	..	4,981	18,034	..	8,170	81,972	..	13,151	−13·83	..	..	..	..
	Inam land ..	..	..	..	17,762	3,703	..	5,257	60	..	23,019	3,763	..	+19·54	..	..	..	..
	Zemindari land ..	..	..	..	741	4	..	5	..	1	746	3	..	+ 0·40	..	..	..	..
	Total ..	..	..	..	82,441	..	1,274	23,296	..	8,111	105,737	..	9,385	− 8·15	..	..	..	..
Total ..	Government land ..	2,588,231	1,494,434	815,115	139,314	..	13,469	31,161	..	16,107	170,475	..	29,576	−14·78	..	..	..	..
	Inam land ..	646,329	508,247	297,505	32,465	..	644	11,536	..	1,155	44,001	..	1,829	− 3·99	South-west monsoon.	11·02	7·65	−30·58
	Zemindari land ..	2,375,040	..	..	741	4	..	5	..	1	746	3	..	+ 0·40	North-east monsoon.	14·79	9·34	−36·85
	Total ..	5,609,600	2,002,681	1,112,620	172,520	..	14,109	42,702	..	17,293	215,222	..	31,402	−12·73	..	25·81	16·99	−34·17

Comparative statement of Irrigation and Rainfall for the years 1890–91 and 1891–92, &c.—*cont.*

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Areas irrigated. Sown from April to November 1891, *i.e.*, 1st crop. Total acres.	Sown from April to November 1891, In comparison with 1890–91. Increase.	Sown from April to November 1891, In comparison with 1890–91. Decrease.	Sown from December 1891 to March 1892, *i.e.*, 2nd crop. Total acres.	Sown from December 1891 to March 1892, In comparison with 1890–91. Increase.	Sown from December 1891 to March 1892, In comparison with 1890–91. Decrease.	Whole year, 1891–92. Total acres.	Whole year, 1891–92. In comparison with 1890–91. Increase.	Whole year, 1891–92. In comparison with 1890–91. Decrease.	Percentage of increase or decrease in 1891–92.	Rainfall. Monsoon.	Rainfall. 1890–91.	Rainfall. 1891–92.	Rainfall. Percentage of increase or decrease in 1891–92.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Cuddapah.					ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
	Government land ..	4,795,890	1,740,291	1,070,805	51,377	..	15,800	47,915	..	24,266	99,292	..	40,066	— 28·75	..	..	..	..
	Inam land	790,917	692,672	450,411	29,171	..	9,017	22,236	..	12,732	51,407	..	21,749	— 29·73	South-west monsoon.	12·71	9·71	— 23·60
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	9·05	4·46	— 50·72
	Total ..	5,586,807	2,432,963	1,521,216	80,548	..	24,817	70,151	..	36,998	150,699	..	61,815	— 29·09	..	21·76	14·17	— 34·88
	Anantapur.																	
	Government land ..	2,567,443	2,132,741	819,826	47,879	..	632	29,960	..	23,503	77,839	..	24,135	— 23·66	..	..	..	..
	Inam land	612,853	526,021	315,382	12,405	..	2,853	9,122	..	7,384	21,527	..	10,237	— 32·23	South-west monsoon.	11·86	6·39	— 46·12
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	9·00	4·47	— 50·33
	Total ..	3,180,296	2,658,762	1,135,208	60,284	..	3,485	39,082	..	30,887	99,366	..	34,372	— 25·70	..	20·86	10·86	— 47·94
	Bellary.																	
	Government land ..	3,038,024	2,512,310	1,144,528	26,975	..	1,571	4,154	..	3,800	31,129	..	5,371	— 14·71	..	..	..	..
	Inam land	840,704	746,407	392,716	9,677	..	363	1,124	..	993	10,801	..	1,356	— 11·15	South-west monsoon.	14·85	7·25	— 51·18
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	9·43	2·67	— 71·69
	Total ..	3,878,728	3,258,717	1,537,244	36,652	..	1,934	5,278	..	4,793	41,930	..	6,727	— 13·83	..	24·28	9·92	— 59·14
	Kurnool.																	
Kurnool-Cuddapah canal.	Government land ..	..	..	..	43,305	28,223	..	4,107	401	..	47,412	28,624	..	+ 152·35	..	..	..	..
	Inam land	..	..	..	23,512	19,203	..	2,328	1,284	..	25,840	20,487	..	+ 382·72	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	66,817	47,426	..	6,435	1,685	..	73,252	49,111	..	+ 203·43	..	..	..	..

Cumbum tank.	Government land ..	..	..	..	3,226	..	232	96	..	2,893	3,322	..	3,125	— 48·47	..	..	..	..
	Inam land	..	..	..	1,603	..	217	52	..	1,167	1,655	..	1,384	— 45·54	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	4,829	..	449	148	..	4,060	4,977	..	4,509	— 47·53	..	..	..	..
Other works.	Government land ..	..	..	..	22,887	..	6,623	3,731	..	4,265	26,618	..	10,888	— 29·03	..	..	..	..
	Inam land	..	..	..	14,372	..	6,009	2,053	..	2,125	16,425	..	8,134	— 33·12	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	37,259	..	12,632	5,784	..	6,390	43,043	..	19,022	— 30·65	..	..	..	..
Total ..	Government land ..	3,960,626	1,589,235	1,070,687	69,418	21,368	..	7,934	..	6,757	77,352	14,611	..	+ 23·29	..	..	..	..
	Inam land	1,011,534	1,001,123	705,328	39,487	12,977	..	4,433	..	2,008	43,920	10,969	..	+ 33·29	South-west monsoon.	23·58	11·59	— 50·85
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	5·48	3·20	— 41·61
	Total ..	4,972,160	2,590,358	1,776,015	108,905	34,345	..	12,367	..	8,765	121,272	25,580	..	+ 26·73	..	29·06	14·79	— 49·11
	Chingleput.																	
Chembrambakam.	Government land ..	..	..	..	4,410	..	980	627	..	1,630	5,037	..	2,610	— 34·13	..	..	..	..
	Inam land	..	..	..	1,101	..	296	201	..	91	1,302	..	387	— 22·90	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	5,511	..	1,276	828	..	1,721	6,339	..	2,997	— 32·10	..	..	..	..
Madras water-supply and irrigation extension project.	Government land ..	..	..	..	5,004	..	3,446	1,344	..	307	6,348	..	3,753	— 37·15	..	..	..	..
	Inam land	..	..	..	967	..	191	267	126	..	1,234	..	65	— 5·00	..	..	..	..
	Zemindari land ..	..	..	..	148	..	..	16	..	..	164	..	..	..	..	..	..	..
	Total ..	..	..	..	6,119	..	3,637	1,627	..	181	7,746	..	3,818	— 33·02	..	..	..	..
Vallúr anicut.	Government land ..	..	..	..	1,501	..	425	89	..	30	1,590	..	455	— 22·25	..	..	..	..
	Inam land	..	..	..	2,529	..	299	68	6	..	2,597	..	293	— 10·14	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	4,030	..	724	157	..	24	4,187	..	748	— 15·15	..	..	..	..
Other works.	Government land ..	..	..	..	185,935	..	76,823	79,102	26,449	..	265,037	..	50,374	— 15·97	..	..	..	..
	Inam land	..	..	..	32,040	..	9,974	11,326	3,874	..	43,366	..	6,100	— 12·33	..	..	..	..
	Zemindari land ..	..	..	..	2,423	303	..	524	199	..	2,947	502	..	+ 20·53	..	..	..	..
	Total ..	..	..	..	220,398	..	86,494	90,952	30,522	..	311,350	..	55,972	— 15·24	..	..	..	..
Total ..	Government land ..	1,312,943	738,709	478,382	196,850	..	81,674	81,162	24,482	..	278,012	..	57,192	— 17·06	..	..	..	..
	Inam land	265,018	258,061	105,438	36,637	..	10,760	11,862	3,915	..	48,499	..	6,845	— 12·38	South-west monsoon.	19·60	8·08	— 58·78
	Zemindari land ..	239,876	229,437	50,641	2,571	303	..	540	199	..	3,111	502	..	+ 19·24	North-east monsoon.	11·36	21·34	+ 87·85
	Total ..	1,817,837	1,226,207	634,461	236,058	..	92,131	93,564	28,596	..	329,622	..	63,635	— 16·16	..	30·96	29·42	— 4·97

Comparative statement of Irrigation and Rainfall for the years 1890-91 and 1891-92, &c.—*cont.*

Works.*	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Areas irrigated. Sown from April to November 1891, *i.e.*, 1st crop. Total acres.	In comparison with 1890-91. Increase.	In comparison with 1890-91. Decrease.	Sown from December 1891 to March 1892, *i.e.*, 2nd crop. Total acres.	In comparison with 1890-91. Increase.	In comparison with 1890-91. Decrease.	Whole year, 1891-92. Total acres.	In comparison with 1890-91. Increase.	In comparison with 1890-91. Decrease.	Percentage of increase or decrease in 1891-92.	Rainfall. Monsoon.	1890-91.	1891-92.	Percentage of increase or decrease in 1891-92.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	North Arcot.					ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Pálár anicut.	Government land ..	..	..	..	43,382	..	19,263	21,807	3,533	..	65,189	..	15,730	—19·43	..	..	..	..
	Inam land ..	..	..	..	6,360	..	1,143	3,573	1,099	..	9,933	..	44	— 4·41	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	49,742	..	20,406	25,380	4,632	..	75,122	..	15,774	—17·35	..	..	..	..
Cheyár anicut.	Government land ..	..	..	..	14,375	..	1,551	3,059	..	1,662	17,434	..	3,213	—15·56	..	..	..	..
	Inam land ..	..	..	..	1,457	..	254	270	..	186	1,727	..	440	—20·30	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	15,832	..	1,805	3,329	..	1,848	19,161	..	3,653	—16·01	..	..	..	..
Poiney anicut.	Government land ..	..	..	..	14,586	..	7,490	4,281	1,801	..	18,867	..	5,689	—23·17	..	..	..	..
	Inam land ..	..	..	..	576	..	977	515	255	..	1,091	..	722	—39·82	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	15,162	..	8,467	4,796	2,056	..	19,958	..	6,411	—24·31	..	..	..	..
Other works.	Government land ..	..	..	..	143,049	..	63,732	92,717	6,573	..	235,766	..	57,159	—19·51	..	..	..	..
	Inam land ..	..	..	..	21,631	..	6,666	13,965	40	..	35,596	..	6,626	—15·69	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	164,680	..	70,398	106,682	6,613	..	271,362	..	63,785	—19·03	..	..	..	..
Total ..	Government land ..	2,411,716	990,604	702,597	215,392	..	92,036	121,864	10,245	..	337,256	..	81,791	—19·52	..	..	..	..
	Inam land ..	206,524	116,688	90,772	30,024	..	9,040	18,323	1,208	..	48,347	..	7,832	—13·94	South-west monsoon.	19·68	10·87	—44·77
	Zemindari land ..	2,179,840	..	..	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	12·40	15·49	+24·92
	Total ..	4,798,080	1,107,292	793,369	245,416	..	101,076	140,187	11,453	..	385,603	..	89,623	—18·86	..	32·08	26·36	—17·83

	South Arcot.																	
Pelandorai anicut.	Government land ..	..	..	..	3,415	150	..	429	..	119	3,844	31	..	+ 0·81	..	..	..	..
	Inam land ..	..	..	..	512	32	..	199	68	..	711	100	..	+16·37	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	3,927	182	..	628	..	51	4,555	131	..	+ 2·96	..	..	..	..
Lower Coleroon anicut.	Government land ..	..	..	..	85,457	..	12,204	13,891	5,933	..	99,348	..	6,271	− 5·94	..	..	..	..
	Inam land ..	..	..	..	7,316	..	1,582	1,632	568	..	8,948	..	1,014	−10·18	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	92,773	..	13,786	15,523	6,501	..	108,296	..	7,285	− 6·30	..	..	..	..
Shatyatope anicut.	Government land ..	..	..	..	15,721	..	1,220	6,416	..	526	22,137	..	1,746	− 7·31	..	..	..	..
	Inam land ..	..	..	..	1,966	..	..	440	..	27	2,406	..	27	− 1·11	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	17,687	..	1,220	6,856	..	553	24,543	..	1,773	− 6·73	..	..	..	..
Vriddhá-chalam anicut.	Government land ..	..	..	..	3,388	..	80	1,430	69	..	4,818	..	11	− 0·23	..	..	..	..
	Inam land ..	..	..	..	265	12	..	129	6	..	394	18	..	+ 4·79	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	3,653	..	68	1,559	75	..	5,212	7	..	+ 0·13	..	..	..	..
Mehmattur anicut.	Government land ..	..	..	..	2,189	..	99	715	11	..	2,904	..	88	− 2·94	..	..	..	..
	Inam land ..	..	..	..	99	..	10	88	38	..	187	28	..	+17·61	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	2,288	..	109	803	49	..	3,091	..	60	− 1·90	..	..	..	..
Tirukoilúr anicut.	Government land ..	..	..	..	18,958	..	217	9,346	1,655	..	28,304	1,438	..	+ 5·35	..	..	..	..
	Inam land ..	..	..	..	1,351	..	8	884	44	..	2,235	36	..	+ 1·64	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	20,309	..	225	10,230	1,699	..	30,539	1,474	..	+ 5·06	..	..	..	..
Other works.	Government land ..	..	..	..	139,094	..	33,625	124,998	42,269	..	264,092	8,744	..	+ 3·42	..	..	..	..
	Inam land ..	..	..	..	9,270	..	1,057	6,763	1,776	..	16,033	739	..	+ 4·83	..	..	..	..
	Zemindari land ..	..	..	..	21	..	70	..	..	30	21	..	100	−82·65	..	..	..	..
	Total ..	..	..	..	148,385	..	34,632	131,761	44,015	..	280,146	9,383	..	+ 3·42	..	..	..	..
Total ..	Government land ..	3,024,681	2,320,985	1,256,199	268,222	..	47,195	157,225	49,292	..	425,447	2,097	..	+ 0·49	..	..	..	..
	Inam land ..	144,019	137,808	67,354	20,779	..	2,693	10,135	2,473	..	30,914	..	120	− 0·39	South-west monsoon.	19·98	9·33	−53·30
	Zemindari land ..	166,177	14,080	3,495	21	..	70	..	..	30	21	..	100	−82·65	North-east monsoon.	16·60	27·90	+68·07
	Total ..	3,334,877	2,472,873	1,327,048	289,022	..	49,858	167,360	51,735	..	456,382	1,877	..	+ 0·41	..	36·58	37·23	+ 1·78

Comparative statement of Irrigation and Rainfall for the years 1890–91 and 1891–92, &c.—*cont.*

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	AREAS IRRIGATED. Sown from April to November 1891, *i.e.*, 1st crop. Total acres.	In comparison with 1890–91. Increase.	In comparison with 1890–91. Decrease.	Sown from December 1891 to March 1892, *i.e.*, 2nd crop. Total acres.	In comparison with 1890–91. Increase.	In comparison with 1890–91. Decrease.	Whole year, 1891–92. Total acres.	In comparison with 1890–91. Increase.	In comparison with 1890–91. Decrease.	Percentage of increase or decrease in 1891–92.	RAINFALL. Monsoon.	1890–91.	1891–92.	Percentage of increase or decrease in 1891–92.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Tanjore.					ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Upper anicut.	Government land ..	..	..	..	728,886	..	9,230	72,203	3,674	..	801,089	..	5,556	— 0·69	..	..	..	..
	Inam land	..	..	..	105,531	..	1,589	14,784	1,339	..	120,315	..	250	— 0·21	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	834,417	..	10,819	86,987	5,013	..	921,404	..	5,806	— 0·63	..	..	..	..
Other works.	Government land ..	..	..	..	38,957	..	3,604	9,699	3,871	..	48,656	267	..	+ 0·55	..	..	..	..
	Inam land	..	..	..	4,677	..	15	611	347	..	5,288	332	..	+ 6·70	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	43,634	..	3,619	10,310	4,218	..	53,944	599	..	+ 1·12	..	..	..	..
Total ..	Government land ..	1,590,650	1,167,355	987,307	767,843	..	12,834	81,902	7,545	..	849,745	..	5,289	— 0·62	South-west monsoon.	18·00	8·69	— 51·72
	Inam land	592,684	461,327	264,704	110,208	..	1,604	15,395	1,686	..	125,603	82	..	+ 0·06				
	Zemindari land ..	1,90,842	..	..	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	22·49	38·01	+ 69·01
	Total ..	2,374,176	1,628,682	1,252,011	878,051	..	14,438	97,297	9,231	..	975,348	..	5,207	— 0·53	..	40·49	46·70	+ 15·34
	Trichinopoly.																	
	Government land ..	1,716,897	1,124,410	755,905	100,981	5,391	..	42,278	..	15,941	143,259	..	10,550	— 6·86	South-west monsoon.	17·43	9·26	— 46·87
	Inam land	215,263	171,236	114,796	9,631	665	..	2,928	..	301	12,559	364	..	+ 2·98				
	Zemindari land ..	391,680	321,105	..	..	..	14	20	..	11	20	..	25	— 55·55	North-east monsoon.	19·32	18·38	— 4·86
	Total ..	2,323,840	1,616,751	870,701	110,612	6,042	..	45,226	..	16,253	155,838	..	10,211	— 6·15	..	36·75	27·64	— 24·79
	Madura.																	
	Government land ..	2,043,422	1,257,819	907,891	131,382	..	14,100	70,840	19,180	..	202,222	5,080	..	+ 2·58	South-west monsoon.	12·45	6·79	— 45·46
	Inam land	217,898	203,280	84,429	11,691	..	1,417	8,110	2,447	..	19,801	1,030	..	+ 5·49				
	Zemindari land ..	3,370,240	1,342,720	..	14	..	80	1	1	..	15	..	79	— 84·04	North-east monsoon.	17·91	26·49	+ 47·91
	Total ..	5,631,560	2,803,819	992,320	143,087	..	15,597	78,951	21,628	..	222,038	6,031	..	— 2·79	..	30·36	33·28	+ 9·62

	Tinnevelly.																	
Srivaikuntham anicut.	Government land.	..	..	..	17,961	13,360	..	14,477	..	2,617	32,438	10,743	..	+49·51	..	..	..	..
	Inam land ..	..	..	..	1,023	825	..	1,028	76	..	2,051	901	..	+78·35	..	..	..	..
	Zemindari land ..	..	..	..	594	594	..	961	258	..	1,555	852	..	+121·19	..	..	..	..
	Total ..	..	..	..	19,578	14,779	..	16,466	..	2,283	36,044	12,496	..	+53·07	..	..	..	..
Marudur anicut.	Government land.	..	..	..	16,429	6,190	..	14,979	..	786	31,408	5,404	..	+20·78	..	..	..	..
	Inam land ..	..	..	..	660	318	..	463	..	39	1,123	279	..	+33·06	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	17,089	6,508	..	15,442	..	825	32,531	5,683	..	+21·17	..	..	..	..
Other works.	Government land.	..	..	..	72,799	2,370	..	166,633	7,277	..	239,432	9,647	..	+ 4·20	..	..	..	..
	Inam land ..	..	..	..	6,630	30	..	14,218	1,430	..	20,848	1,460	..	+ 7·53	..	..	..	..
	Zemindari land ..	..	..	..	17,884	7,643	..	16,999	8,085	..	34,883	15,728	..	+82·11	..	..	..	..
	Total ..	..	..	..	97,313	10,043	..	197,850	16,792	..	295,163	26,835	..	+10·00	..	..	..	..
Total ..	Government land.	1,898,660	1,526,362	1,210,702	107,189	21,920	..	196,089	3,874	..	303,278	25,794	..	+ 9·30	..	..	..	..
	Inam land ..	269,759	238,784	193,251	8,313	1,173	..	15,709	1,467	..	24,022	2,640	..	+12·35	South-west monsoon.	5·52	6·03	+ 9·24
	Zemindari land ..	928,950	668,619	251,691	18,478	8,237	..	17,960	8,343	..	36,438	16,580	..	+83·49	North-east moonsoon.	17·25	27·55	+59·71
	Total ..	3,097,369	2,433,765	1,655,644	133,980	31,330	..	229,758	13,684	..	363,738	45,014	..	+14·12	..	22·77	33·58	+47·47
	Coimbatore.																	
Tadapalli channel.	Government land.	..	..	..	13,569	222	..	827	345	..	14,396	567	..	+ 4·10	..	..	..	..
	Inam land ..	..	..	..	637	2	..	22	..	..	659	2	..	+ 0·30	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	14,206	224	..	849	345	..	15,055	569	..	+ 3·93	..	..	..	..
Arakankotai channel.	Government land.	..	..	..	3,928	39	..	..	..	..	3,928	39	..	+ 1·00	..	..	..	..
	Inam land ..	..	..	..	166	..	12	..	..	..	166	..	12	− 6·74	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	4,094	27	..	..	..	..	4,094	27	..	+ 0·66	..	..	..	..
Kalingaroyan anicut.	Government land.	..	..	..	9,685	503	..	8,593	469	..	18,278	972	..	+ 5·61	..	..	..	..
	Inam land ..	..	..	..	1,544	125	..	1,271	31	..	2,815	156	..	+ 5·86	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	11,229	628	..	9,864	500	..	21,093	1,128	..	+ 5·65	..	..	..	..

Comparative statement of Irrigation and Rainfall for the years 1890–91 and 1891–92, &c.—*cont.*

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	AREAS IRRIGATED. Sown from April to November 1891, *i.e.*, 1st crop. Total acres.	In comparison with 1890–91. Increase.	In comparison with 1890–91. Decrease.	Sown from December 1891 to March 1892, *i.e.*, 2nd crop. Total acres.	In comparison with 1890–91. Increase.	In comparison with 1890–91. Decrease.	Whole year, 1891–92. Total acres.	In comparison with 1890–91. Increase.	In comparison with 1890–91. Decrease.	Percentage of increase or decrease in 1891–92.	RAINFALL. Monsoon.	1890–91.	1891–92.	Percentage of increase or decrease in 1891–92.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
						ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Other works.	Government land ..	..	..	..	60,295	2,341	..	19,767	..	515	80,062	1,826	..	+ 2·33	..	..	..	..
	Inam land ..	..	..	..	7,013	454	..	2,821	..	291	9,834	163	..	+ 1·69	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	67,308	2,795	..	22,588	..	806	89,896	1,989	..	+ 2·26	..	..	..	..
Total ..	Government land ..	4,586,795	2,774,623	2,122,210	87,477	3,105	..	29,187	299	..	116,664	3,404	..	+ 3·00	..	..	..	..
	Inam land ..	336,725	314,681	255,053	9,360	569	..	4,114	..	260	13,474	309	..	+ 2·35	South-west monsoon.	11·62	8·12	— 30·12
	Zemindari land ..	106,880	86,968	68,998	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	14·07	12·98	— 7·75
	Total ..	5,030,400	3,176,272	2,446,261	96,837	3,674	..	33,301	39	..	130,138	3,713	..	+ 2·94	..	25·69	21·10	— 17·87
	Salem.																	
Barúr tank project.	Government land ..	..	..	..	1,480	71	..	411	..	380	1,891	..	309	—14·05	..	..	..	..
	Inam land ..	..	..	..	147	..	4	22	..	55	169	..	59	—25·88	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	1,627	67	..	433	..	435	2,060	..	368	—15·16	..	..	..	..
Other works.	Government land ..	..	..	..	75,142	..	19,958	28,162	2,319	..	103,304	..	17,639	—14·58	..	..	..	..
	Inam land ..	..	..	..	6,004	..	1,001	1,985	..	667	7,989	..	1,668	—17·27	..	..	..	..
	Zemindari land ..	..	..	..	233	..	..	34	..	64	267	..	64	—19·33	..	..	..	..
	Total ..	..	..	..	81,379	..	20,959	30,181	1,588	..	111,560	..	19,371	—14·79	..	..	..	..
Total ..	Government land ..	3,410,898	1,810,093	1,281,805	76,622	..	19,887	28,573	1,939	..	105,195	..	17,948	—14·57	..	..	..	..
	Inam land ..	258,640	155,815	51,913	6,151	..	1,005	2,007	..	722	8,158	..	1,727	—17·47	South-west monsoon.	18·98	10·61	— 44·10
	Zemindari land ..	1,111,675	..	..	233	..	..	34	..	64	267	..	64	—19·33	North-east monsoon.	12·32	8·85	— 28·17
	Total ..	4,781,213	1,965,908	1,333,718	83,006	..	20,892	30,614	1,153	..	113,620	..	19,739	—14·80	..	31·30	19·46	— 37·83

Total anicut.	Government land	..	..	..	1,714,887	..	1,426	229,550	15,753	..	1,944,437	14,327	..	+ 0·74	..	..	..	..
	Inam land	..	..	..	418,806	10,626	..	60,986	12,552	..	479,792	23,178	..	+ 5·07	..	..	..	..
	Zemindari land	..	..	..	241,677	11,060	..	21,383	9,141	..	263,060	20,201	..	+ 8·32	..	..	..	..
	Total ..	..	..	..	2,375,370	20,260	..	311,919	37,446	..	2,687,289	57,706	..	+ 2·19	..	..	..	..
Total other works.	Government land	..	..	..	1,390,246	..	280,846	748,379	18,247	..	2,138,625	..	262,599	—10·94	..	..	..	..
	Inam land	..	..	..	258,767	..	56,410	106,008	..	18,187	864,775	..	74,597	—16·98	..	..	..	..
	Zemindari land	..	..	..	45,251	..	3,374	18,669	7,302	..	63,920	3,928	..	+ 6·55	..	..	..	..
	Total ..	..	..	..	1,694,264	..	340,630	873,056	7,362	..	2,567,320	..	333,268	—11·49	..	..	..	..
Grand Total including anicuts and other works.	Government land	48,366,849	27,169,527	17,453,559	3,105,133	..	282,272	977,929	34,000	..	4,083,062	..	248,272	— 5·73	..	..	..	..
	Inam land	8,055,232	6,881,989	4,380,404	677,573	..	45,784	166,994	..	5,635	844,567	..	51,419	— 5·74	South-west monsoon.	18·66	12·12	—35·05
	Zemindari land	26,812,537	4,630,959	1,104,288	286,928	7,686	..	40,052	16,443	..	326,980	24,129	..	+ 7·96	North-east monsoon.	13·46	12·80	— 4·90
	Total ..	83,234,618	38,682,475	22,938,251	4,069,634	..	320,370	1,184,975	44,808	..	5,254,609	..	275,562	— 4·98	..	32·12	24·92	—22·42

No. 191 I.

Submitted to Government.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Chief Engineer for Irrigation.

CHEPÂK,
14th Nov. 1892.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 18th November 1892, No. 968 I., Public Works.

The statement of irrigation and rainfall for 1891–92 received from the Board of Revenue will be forwarded to the Government of India.

(Here enter No. 969 I., Public Works, dated 18th November 1892.)

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineers.
,, the Revenue Department.
Editors' Table.

ENDORSEMENT—dated 18th November 1892, No. 969 I., Public Works.

Forwarded.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION,
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 18th.

Recd. *Encl.*

G.O., 18th Nov. 1892, Nos. 968, 969 I.

NOVEMBER.

Statement of Irrigation and Rainfall

Forwarding the.— for 1891-92.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From W. B. DEWINTON, Esq., Superintendent of Works, No. I Periyár Division, to the Chief Engineer, Public Works Department, dated Periyár, 31st October 1892, No. 174 C.E.

I have the honour to report that progress on the main dam is being much delayed because I cannot get materials down to it quick enough.

2. Our daily progress should be 6,000 cubic feet made up as follows :—

	CUBIC FEET.
Concrete	4,000
Rubble	2,000

I can manage the latter well enough, but not the former.

3. We have six stone crushers at work in the workshops driven by the turbine, but their maximum daily outturn to date, working full time, is only 2,500 cubic feet, and though I hope to increase this to 3,000 cubic feet, I am not at all sanguine of maintaining it, because it depends on everything working without the smallest hitch.

4. I have, therefore, hitherto had to supplement the crushers by breaking stone by hand in the right bank escape quarry, but this costs me Rs. 8 per 100 cubic feet as compared with about Re. 1 in the crushers. This latter rate is pure conjecture, as no data are yet available for estimating it, though I hope to have them shortly, but it cannot possibly be more and is probably less.

Note.—I have since ascertained that Re. 1 per 100 cubic feet is approximately correct.
(Intld.) W. D. DEW.

5. There is no more room in the shops for additional crushers, and I therefore propose to obtain the additional quantity of broken stone required by setting up two more stone crushers driven by 10 horse-power portable engines in the right bank escape quarry and conveying the stone thence direct to the dam by a second incline tramway, the rails for which are now on their way out from England.

6. I therefore submit an estimate, amounting to Rs. 18,000, for this purpose and beg that you will be good enough to obtain sanction for it at an early date and also to my obtaining the machines from Messrs. Richardson and Cruddas of Bombay, who say they can supply them in three months from date of order, whereas it would take nine months to get them from England.

7. I have no data for estimating the comparative cost of obtaining the machine from England and from Bombay, because the stone crushers now specified are considerably larger than those now at work here, but with exchange at its current low rate the cost must be very similar and in any case the saving on being able to break stone by machinery instead of by hand six months earlier would nearly pay for the plant.

8. The report attached to the estimate will give you further information as to comparative cost, &c.

ORDER—dated 19th November 1892, No. 974 I., Public Works.

The following estimate is sanctioned, the amount required for it being met from the balance available for tools and plant, Periyár project, which will then be Rupees 24,850.

Capital Expenditure not charged to Revenue.
49. Irrigation.
Periyár Project.
III. Tools and Plant.
(12) Miscellaneous.

	RS.
Purchasing two stone crushers and two 10 horse-power portable engines. Estimate	18,000

2. This sanction is registered as No. 132 I. of 1892–93.

3. The purchase of the machinery from Messrs. Richardson and Cruddas, Bombay, is sanctioned. The Superintendent of Works will adopt the procedure indicated in para. 3 of G.O. No. 1679 W., dated 2nd July 1886, with respect to ascertaining the probable price if obtained through the India Office.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Superintendent of Works, No. I Periyár division, with 2 enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 19th.

Recd. *Encl.*

G.O., 19th Nov. 1892, No. 974 I.

NOVEMBER.

Periyar Project

Stone Crushers.—Estimate of Rs. 18,000 for purchasing two — and two 10 horse-power portable engines for use of No. I Periyár division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From the Officiating Deputy Secretary to the Government of India, Public Works Department (Account—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, the 3rd November 1892, No. 81 A.I.

With reference to your letter No. 791 I., dated the 19th September 1892, I am directed to state that the Government of India has been pleased to confirm the sanction accorded in Public Works Department telegram No. 80 A.I., dated 3rd November 1892, to an additional grant of Rs. 57,400 under 35. Construction of Protective Irrigation works for expenditure on the Rushikulya project during 1892–93.

2. With this addition the grant for 1892–93 under 35. Construction of Protective Irrigation works will stand at Rs. 5,07,400, and the Government of India trusts that none of this money will be allowed to lapse.

ORDER—dated 19th November 1892, No. 975 I., Public Works.

Communicated to the officers concerned for information in continuation of G.O., No. $\frac{909\ \text{I.}}{\text{A.}}$, dated 7th November 1892.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 19th.

Recd. *Encl.*

G.O., 19th Nov. 1892, No. 975 I.

NOVEMBER.

Rushikulya Project

Letter from the Government of India confirming the sanction accorded by telegram to an additional allotment of Rs. 57,400 for expenditure on the — during 1892-93, communicated to the officers concerned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers :—

Endorsement of the Superintending Engineer, V Circle, dated 26th October 1892, No. 332 E.I.

No. 185 I.

Note by the Acting Chief Engineer for Irrigation.

With reference to the request made by the ryots of Periyapolliam in the Chingleput district to His Excellency the Governor during his second tour in September 1891, that an anicut should be constructed across the Narnaveram river for the better supply of their lands, the matter was forwarded to the Superintending Engineer, V Circle, for necessary investigation and report.

2. The Sub-divisional officer's report on the proposal of the ryots shows that the ryots were not very certain as to what they really wanted, as it appears they would now be content if a head-sluice were constructed for their channel somewhat above the existing one which is too low down and the leading channel to which naturally gets much silted up on the occasion of every fresh in the river. The repairs of this channel as well as others of the same nature taking off from the Narnaveram river have hitherto been carried out by "Kudimaramat," and it is most probably due to the neglect of the Periyapolliam ryots to carry out these repairs that the channel has fallen into such an unsatisfactory condition. The head-sluice asked for may, I consider, be built, but the clearance of the channel of silt and its banks of prickly-pear growth should devolve on the ryots themselves.

Ootacamund, (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
9th November 1892. Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 21st November 1892, No. 979 I., Public Works.

The inhabitants of Periyapolliam will be informed that the head-sluice asked for will be built, but the clearance of the channel of silt and its banks of prickly-pear growth will devolve on themselves.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle.
" Public Department.
" Revenue "
" Presentees of the Address.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 21st.

Recd. *Encl.*

G.O., 21st Nov. 1892, No. 979 I.

NOVEMBER.

Head Sluice

The inhabitants of Periyapolliam, Chingleput district, informed that the — asked for will be built, but the clearance of the channel of silt and its banks of prickly-pear growth will devolve on themselves.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From A. A. G. MALET, Esq., Executive Engineer, Kistna Western division, to the Superintending Engineer, II Circle, dated 27th October 1892, No.572 S.

I have the honour to submit, for sanction, an estimate, amounting to Rs, 20,000, for the locomotive engines including wagons and rails received from the Dowlaishweram Workshop through the Kistna Eastern division for use on the widening of the main canal and request that it may be sanctioned under 49. Tools and Plant.

I presume the plant in question will be transferred to the Kistna Eastern division when the above work is completed.

The estimate is based on the amounts debited to this division from the Godávari Eastern and Kistna Eastern divisions and a sum of about Rs. 3,800 has been provided for the repairs still required during the year.

No. 1933 K.S.

Forwarded to the Chief Engineer for Irrigation for favour of obtaining the sanction of Government to the estimate accompanying.

2. The circumstances under which these tools, &c., had to be obtained for this division were explained in this office letter No. 1146 K.S., dated 4th August 1890, and their transfer from the Godávari was ordered in his memo. No. II/136 K.S., dated 24th October 1890.

(Signed) J. W. MARTIN,
Superintending Engineer, II Circle.

4th November 1892.

Order—dated 21st November 1892, No. 980 I., Public Works.

The following estimate is sanctioned from the balance of the lump sum provision available for tools and plant of the Kistna delta system which will then be reduced to Rs. 1,37,164:—

49. Capital Expenditure on Irrigation Works not charged to Revenue.
Kistna Delta System.
Western Division.
III. Tools and Plant.

	RS.
Locomotive engines, wagons and tramway lines, estimate	20,000

2. This sanction is registered as No. 133 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, with one enclosure.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 21st.

Recd. *Encl.*

G.O., 21st Nov. 1892, No. 980 I.

NOVEMBER.

Tools and Plant

Estimate of Rs. 20,000 for the locomotive engines, wagons and tramway lines, required for the use of the Kistna Western division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—again the following paper:—

G. O., dated 8th February 1892, No. 395 W., Public Works.

Read—also the following paper:—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 1st November 1892, No. 800 G.N.

With reference to your No. I/16 G.N., dated the 13th February 1892, on copy of G.O., No. 395 W., dated the 8th February 1892, in the matter of constructing an anicut across the Rushikulya river near the village of Tippalapotra in the Suradá division, Ganjam district, I have the honour to submit, herewith, copy of a report on the proposed scheme by Mr. Somers-Eve, Executive Engineer in charge of the Russellkonda Sub-division, in the Rushikulya division.

2. The Executive Engineer (Mr. deMorgan) of the Rushikulya division is of opinion and I agree with him that the cost of the scheme is prohibitive and the nature of the locality renders it unsuitable as a famine work and that the project is not worthy of a more detailed investigation.

Enclosure.

Report by J. F. SOMERS-EVE, Esq., Executive Engineer, on a proposed famine relief work in the Suradá division, Goomsur, viz., "to construct an anicut across the Rushikulya river in the village of Tippalapotra and to dig canals from it, Rs. 20,000."

The scheme is on first inspection utterly impracticable from its situation and cost, but to prevent further reference some details are given.

2. *Acreage.*—The possible acreage is stated by the revenue authorities as 2,000 acres. This I learn was arrived at by a Revenue Inspector. The land at present under cultivation is 500 acres and he anticipates that another 1,500 acres would be brought under irrigation.

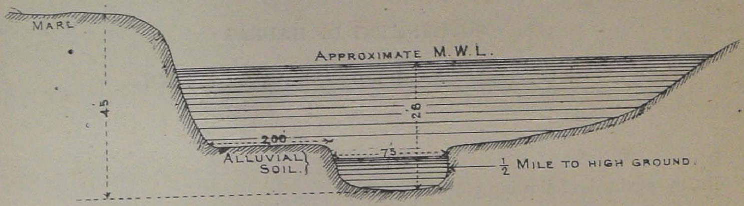
From my knowledge of the people and the country, I consider this to be a very over-sanguine estimate.

3. *Cost.*—Supposing, however, that the anticipated increase of revenue was obtainable, viz., Rs. 4,000, this would allow an expenditure of Rs. 50,000 on the project with a profit of 8 per cent. or Rs. 80,000 at 5 per cent.

I roughly estimate the scheme to cost at least Rs. 1,64,000 as under, and probably this is under-estimated.

	RS.
Anicut and head works	40,000
Left flood embankment	6,000
Channel	1,00,000
Minor channels	6,000
Cross drainage works	12,000
Total ...	1,64,000

4. *Site for the anicut.*—This is well defined at the bottom of a hill and above a steep ridge.



The above is a rough section of the river at the proposed site. On the date of inspection (7th October 1892) there was 3 feet 0 inches of water with a velocity of about 8 feet per second.

5. *Left flood embankment.*—A high and expensive bank would be necessary.

6. *Line of channel.*—From the site of the anicut the line runs through heavy forest to a saddle between two hills (see sketch). This distance is one mile. The ground rises from the river and the necessary cutting would be from 45 to 50 feet deep. The soil is hard marl on the surface and rock would almost certainly be found beneath it.

From the Suppodeo hill the ground falls rapidly, but the cutting would still be heavy.

The line of the channel would continue over land with much hill and dale and distribution would be difficult. In the absence of exact levels I am unable to say whether the land would be commanded at all, but it probably would.

7. *Utility as a famine work.*—It does not appear to be a suitable work. The stone would require quarrying. Heavy cutting is useless for unaccustomed labour. The spot is feverish, and any skilled labour imported would be very dear.

8. *Bearing of the scheme on the Rushikulya project.*—The scheme would do no harm to the main project with the exception of abstracting the small amount of water required for irrigation. The channel would surplus into the Bontuli river which again flows into the Rushikulya.

The scheme would wear a different aspect could the channel be made a feeder for the Suradá reservoir, but this is not I think practicable owing to the hills between it and the river.

Surada,
9th October 1892.

(Signed) J. F. SOMERS-EVE,
Ex. Engr., Russellkonda Sub-dn.

W. C. deMORGAN,
Ex. Engr., Rushikulya dn.

19th October 1892.

Order—dated 21st November 1892, No. 981 I., Public Works.

Communicated to the Revenue Department with reference to its endorsement No. 684, dated 4th February 1892.

2. Mr. Somers-Eve's report shows very clearly that the project is not suited for the employment of famine labour and that the cost would make it wholly prohibitive.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle,
with one enclosure.
„ Revenue Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 21st.

Recd. *Encl.*

G.O., 21st Nov. 1892, No. 981 I.

NOVEMBER.

Anicut across the Rushikulya River

Report on the proposed scheme of constructing an — near the village of Tippalapotra in the Suradá division, Ganjam district, communicated with remarks to the Revenue Department.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 19th October 1892, No. 676 T.N.

I have the honour to submit, for your approval and sanction of Government, an estimate, amounting to Rs. 3,600, accompanied by plans and report, for improving No. 111 Perangeri channel in the Tinnevelly taluk of the same district.

2. It will be seen from the report attached to the estimate that the requirement of the channel has been fully ascertained and the works estimated for are absolutely necessary to render the channel safe and efficient.

3. The rates entered in the estimate are fair. I request also sanction to the entry of the work in the ensuing year's budget.

Order—dated 21st November 1892, No. 982 I., Public Works.

The following estimate is sanctioned :—

Provincial.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Tinnevelly Division.
Major Original Works.
Perangeri channel (No. 111 of the list of works appended to G.O., No. 407 I., dated 6th July 1887).
Improvements.

	RS.
Estimate	3,600

2. This sanction is registered as No. 134 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle, with 14 enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 21st.

Recd. *Encl.*

G.O., 21st Nov. 1892, No. 932 I.

NOVEMBER.

Perangeri Channel

Estimate of Rs. 3,600 for improvements to the — in the Tinnevelly division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From W. HUGHES, Esq., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 4th November 1892, No. 341 E.I.

With reference to my letter No. 238 E.I., dated 17th August 1892, submitting the first report on the Coleroon breaches, I have the honour to submit, herewith, for sanction, the enclosed estimate of Rs. 4,700 for closing the breaches and making good the loss caused to the drainage sluices in course of construction.

The estimate is submitted for your sanction as it includes compensation for loss sustained by the contractor of the drainage sluices.

Order—dated 21st November 1892, No. 983 I., Public Works.

The following estimate is sanctioned :—

Provincial.
43. Minor Works and Navigation.
Agricultural Works.
South Arcot Division.
River Embankments.
Repairs.

	RS.
Coleroon river bank, closing breaches—estimate	4,700

2. This sanction is registered as No. 135 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle, with two enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 21st.

Recd. *Encl.*

G.O., 21st Nov. 1892, No. 983 I.

NOVEMBER.

Coleroon River Bank

Estimate of Rs. 4,700 for closing breaches in the —, South Arcot division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers :—

From Colonel A. T. Fraser, R.E., Superintending Engineer, III Circle, to the Chief Engineer for Irrigation, dated Bellary, 2nd November 1892, No. 2330.

In forwarding a copy of the Executive Engineer's Cuddapah No. 335, dated 31st October 1892, and with reference to Chief Engineer's No. 11-III, dated 13th October 1892, I have the honour to state that, as the expenditure on the Patha channel is Rs. 3,664 already with liabilities Rs. 4,500, the outlay cannot be restricted to Rs. 3,000.

2. I would, therefore, recommend that the original grant may only be modified from Rs. 35,000 to Rs. 20,000 for the present till more funds can be allotted, and that the modification may be intimated as early as possible by telegraph.

Telegram from the Superintending Engineer, III Circle, dated 3rd November 1892.

No. 190 I.

Submitted to Government.

2. In order to provide funds to cover the normal value of work done on the Sagilér project for famine relief purposes, the grant for the Patha-Cuddapah tank was reduced from Rs. 37,000 to 3,000, the expenditure incurred on the work to the end of August 1892 having been only Rs. 1,392. The Superintending Engineer now reports that the expenditure and liabilities already incurred on this work amount to Rs. 8,164 and requests that the grant may be increased again to Rs. 20,000, arrangements having already been made to push on with the work rapidly. There are no funds available at present, but the Superintending Engineer, V Circle, has reported certain surrenders which have not yet been accepted pending receipt of a revised statement of modifications of allotments after considering those sanctioned in G.O., No. 876 I. of 26th October 1892. It is suggested that work on the Patha-Cuddapah tank supply channel may be allowed to be proceeded with in anticipation of allotment of funds, the total expenditure on the work during the current year being limited to Rs. 20,000.

Chepâuk, 14th November 1892.

(Signed) R. R. E. Drake-Brockman, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Joint Secretary to Government, Public Works Department, Irrigation Branch.

Order—dated 21st November 1892, No. 984 I., Public Works.

The Superintending Engineer, III Circle, is authorized to allow work being proceeded with on the Patha-Cuddapah tank supply-channel in the Cuddapah district, the total expenditure during the current year being limited to Rs. 20,000.

2. The Chief Engineer for Irrigation will, in proposing re-appropriation of surrenders, see that the demand for this work is complied with.

3. The following deferred telegram will be sent to the Superintending Engineer, III Circle :—

Your letter 2330, 2nd instant, and telegram 3rd idem. Proceed with Patha-Cuddapah tank supply-channel to a limit of Rs. 20,000 for current year.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, III Circle.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
,, Revenue Department.
Editors' Table.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 21st.

Recd. *Encl.*

G.O., 21st Nov. 1892, No. 984 I.

NOVEMBER.

Patha-Cuddapah Tank Supply-Channel

Telegram to the Superintending Engineer, III Circle, directing that the — work be proceeded with to a limit of Rs. 20,000 for current year.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

No. 193 I.

Note by the Acting Chief Engineer for Irrigation.

With his letter No. 2073, dated 30th October 1891, the Superintending Engineer, III Circle, submitted estimates, amounting to Rs. 15,650, for improving the Márkápur tank No. 8 in the list of Minor Works, P.W.D., in the Kurnool division. The estimates provided for lowering the ground in front of the tank weir to its crest level instead of to two feet above the crest level, for which an estimate, amounting to Rs. 3,580, was sanctioned in G.O., No. 613 I., dated 6th August 1891. A report on the probable financial results of the proposed improvements was called for in telegram No. 47, dated 5th November 1891. With his letter No. 2770, dated 3rd January 1892, the Superintending Engineer forwarded a copy of the report received from the Deputy Collector in charge of the division, in which it is stated that, in addition to the cost of the proposed improvements, a sum not less than Rs. 10,600 will have to be paid for compensation for lands which will be submerged if the improvements be carried out and that the increase of revenue will be small and does not justify so large an expenditure. The estimates were returned to the Superintending Engineer with memo. No. 1 K.R., dated 9th January 1892, intimating that the work to be done to the tank would be settled on inspection by the Chief Engineer for Irrigation. The tank was visited on the 23rd January 1892 and in memo. No. 3 K.R., dated 24th January 1892, the following instructions were laid down:—

(*a*) The work below the tank escape provided for in the estimate sanctioned in G.O., No. 613 I., dated 6th August 1891, viz., lowering the ground level at the escape running down at 1 m. 330 to where that slope runs out on existing ground, the width being reduced from 538′ to 174′ at 330′ from the escape, no spoil being allowed within the full width.

(*b*) Lowering the ground in front of escape to its full width 538′ and down to its crest level.

(*c*) Raising the tank bund where necessary to bring it up to 6′ above escape crest level full top width to be 18 feet.

(*d*) Restoring the damaged escape 80′ long at left flank of the tank and raising it to 1 foot over the other escape.

As work was urgently required for employment of famine laborers, the improvements proposed were ordered to be proceeded with at once in anticipation of sanction to the estimates and the Superintending Engineer was requested to submit them without delay. The improvements (*a*), (*b*) and (*c*) have been carried out and (*d*) remains to be done. With his letter No. 2203, dated 20th October 1892, the Superintending Engineer submitted revised estimates, amounting to Rs. 11,747, or Rs. 11,700 in round sum, for the improvements decided on and these estimates are now recommended for sanction.

The alterations in the design of the weir made in this office should receive the attention of the Superintending Engineer during the execution of the work.

Chepâk, 15th Nov. 1892. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 22nd November 1892, No. 985 I., Public Works.

The following estimates are sanctioned in supersession of the estimate sanctioned in G.O., No. 613 I., dated 6th August 1891 :—

Provincial.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Kurnool Division.
Márkápur Tank (No. 8 on the list of works issued with G.O., No. 407 I., dated 6th July 1887).
Original Works.

	RS.
Tank bund, repairing and widening	1,140
Masonry weir	3,220
Surplus channel	5,840
Land compensation	1,500
	11,700

2. This sanction is registered as No. 136 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, III Circle, with 23 enclosures.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 22nd.

Recd. *Encl.*

G.O., 22nd Nov. 1892, No. 985 I.

NOVEMBER.

Markapur Tank

Estimates, aggregating Rs. 11,700, for works in connection with the — in the Kurnool division, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From A. A. G. MALET, Esq., Executive Engineer, Kistna Western Division, to the Superintending Engineer, II Circle, dated 7th November 1892, No. 608 S.

[Breach in river-flood bank.]

I have the honour to report that there has been a breach in the flood bank about half a mile below Penumudi. The river breached into the old bank canal and the water flowed down the old bank canal for about half a mile to the lower junction of the new diversion with the old bank canal when it breached across the new diversion. I expect to get the breaches made up by the 8th instant.

No. 1971 K.S.

To the Chief Engineer for Irrigation for information.
The breach does not appear to be a serious one.

(Signed) J. W. MARTIN,
Superintending Engineer.

8th November 1892.

ORDER—dated 22nd November 1892, No. 986 I., Public Works.

Recorded with the remark that the date on which the breach occurred with corresponding levels on crest of anicut have not been given. This should be attended to in future in all cases of this nature.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 22nd.

Recd. *Encl.*

G.O., 22nd Nov. 1892, No. 986 I.

NOVEMBER.

Kistna River Right-flood bank

Report of the occurrence of a breach in the — below Penumudi, recorded with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 31st October 1892, No. 798 G.N.

In submitting, herewith, a completion statement for works connected with the Rushikulya project, received from the Executive Engineer, Rushikulya division, for June 1892, I have the honour to request that you will be pleased to obtain the sanction of Government authorizing the Examiner, Public Works Accounts, to admit the excess on certain works therein shown.

2. The Executive Engineer has noted the reasons on the statement for excesses.

3. It will be observed from the statement that a net saving of Rs. 659 has been effected on completion of the works therein enumerated, and I would ask that the amount of saving may be added, as usual, to the balance of lump sum available for unforeseen works connected with the project.

4. I further beg to inform you that the completion statement has been duly verified by the Examiner of Public Works Accounts.

Order—dated 22nd November 1892, No. 987 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the expenditure incurred on the works entered in the completion statement, the net saving of Rs. 659 effected on the works of the Rushikulya project being credited to the balance available for unforeseen works of that project.

2. This sanction is registered as No. 137 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle, with one enclosure.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 22nd.

Recd. *Encl.*

G.O., 22nd Nov. 1892, No. 987 I.

NOVEMBER.

Rushikulya Project Expenditure

The Examiner of Public Works Accounts authorized to pass the — incurred on the works entered in the completion statement for June 1892, Rushikulya division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

THIRD supplemental statement of "redistribution of allotments" for irrigation works in No. II Periyár division for 1892–93.

Division.	Main head.	Sub-head.	Number of items.	Name of work.	Amount of estimate.	Existing grant.	Modification of allotment. Decrease.	Modification of allotment. Increase.	Proposed grant.	Register number.
					RS.	RS.	RS.	RS.	RS.	
No. II Periyár.	2. Main Canals and Branches.			*I Reach.*						
		K. Buildings ..	1	Lascar shed, Ramarajapuram	1,630	789	..	63	852	No. 115 of 1890–91.
		P. Maintenance.	2	Repairing culvert, 2 miles 7 furlongs, I reach.	160	160	..	4	164	,, 3 of 1892–93.
		K. Buildings ..	3	Repairing shed at Natchikulam.	233	..	..	50	50	,, 66 of 1890–91.
		L. Earthwork ..	3A	Excavation main channel, I reach.	1,64,000	31,043	2,668	..	28,375	,, 116 of 1890–91.
				II Reach.						
		L. Earthwork ..	4	Excavation main channel, II reach.	49,200	200	199	..	1	No. 51 of 1889–90.
				III Reach.						
		B. Land ..	5	Compensation for land ..	16,745	200	..	100	300	G.O., No. 51 I. of 23rd Jan. 1888.
		P. Maintenance.	6	Maintenance and repairs to masonry works.	655	635	..	73	708	No. 29 of 1892–93.
		Do. ..	7	Forming dry stone apron in superpassage, 6th cross drainage work, III reach.	175	..	..	175	175	,, 93 of 1892–93.
		Do. ..	8	Clearing silt and widening diversion cut, 1st cross drainage work, III reach.	225	105	..	120	225	,, 94 of 1892–93.
		Do. ..	9	Realignment 17 miles, III reach.	350	..	..	350	350	Estimate under preparation.
				IV Reach.						
		D. Regulators..	10	Irrigation sluice, IV reach.	1,150	..	..	42	42	No. 38 of 1888–89.
		P. Maintenance.	11	Removing barriers, IV reach.	460	..	..	460	460	Estimate under preparation.
				V Reach.						
		B. Land ..	12	Compensation for land, V reach.	10,975	..	..	250	250	G.O., No. 51 I. of 23rd Jan. 1888.
		F. Cross drainage work.	13	Iron trough at 18 miles 6 furlongs, V reach.	950	1,000	50	..	950	No. 80 of 1892–93.
		Do. ..	14	Iron trough at 19 miles 400 feet.	950	1,000	50	..	950	,, 81 of 1892–93.
		P. Maintenance.	15	Closing gaps, V reach ..	147	..	..	147	147	Estimate under preparation.

Third supplemental statement of "redistribution of allotments" for irrigation works in No. II Periyár division for 1892–93—*cont.*

Division.	Main head.	Sub-head.	Number of items.	Name of work.	Amount of estimate.	Existing grant.	Modification of allotment. Decrease.	Modification of allotment. Increase.	Proposed grant.	Register number.
					RS.	RS.	RS.	RS.	RS.	
No. II Periyár—*cont.*	2. Main Canals and Branches—*cont.*			*VI Reach.*						
		B. Land ..	16	Compensation for land, VI reach.	12,205	..	..	300	300	G.O., No. 51 I. of 23rd Jan. 1888.
		P. Maintenance.	17	Forming dry stone apron to Kudikabodai.	180	..	..	180	180	Estimate under preparation.
		E. Falls and weirs.	18	Outlet weir for Vedakulam tank in the west flank, 22 miles 3 furlongs 252 feet.	4,580	4,580	300	..	4,280	No. 44 of 1892–93.
				VIII Reach.						
		L. Earthwork..	19	Excavation main channel, VIII reach.	9,475	3,000	..	2,000	5,000	G.O., No. 51 I. of 23rd Jan. 1888.
				IX Reach.						
		A. Preliminary.	20	Surveying and levelling 9 to 12 reach, and 7 to 10 branch channels.	2,630	977	..	223	1,200	No. 4 of 1891–92.
				XI Reach.						
		B. Land ..	21	Compensation for land, XI reach.	7,890	4,000	700	..	3,300	G.O., No. 51 I. of 23rd Jan. 1888.
				Total, Main Canals and Branches.	..	47,689	3,967	4,537	48,259	
	3. Distributaries.			*III Branch Channel.*						
		B. Land ..	22	Compensation for land, III branch channel.	3,150	..	..	50	50	G.O., No. 51 I. of 23rd Jan. 1888.
		E. Falls and weirs.	23	Fall No. 9, III branch channel.	710	698	..	202	900	Do. do.
		D. Regulators..	24	Head sluice, III branch channel.	1,150	..	..	17	17	No. 44 of 1888–89.
		L. Earthwork..	25	Excavation, III branch channel.	9,240	1,223	811	..	412	G.O., No. 51 I. of 23rd Jan. 1888.
				IV Branch Channel.						
		E. Falls and weirs.	26	Road tunnel and fall combined at crossing on Allanganallore road from the head of IV branch channel.	3,050	560	..	22	582	No. 81 of 1891–92.
		Do. ..	27	No. 2 fall at 7 furlongs 463 feet, IV branch channel.	1,060	82	50	..	32	,, 58 of 1891–92.
					..	2,563	861	291	1,993	
					..	50,252	4,828	4,828	50,252	
				Establishment at 23 per cent. on allotment for works.	..	63,877	..	..	63,877	
				Tools and plant	..	5,000	..	..	5,000	

METTUPATTI,
6th November 1892.

(Signed) J. W. H. ELLIS,
Asst. Engr. in charge of No. II
Periyár Project Division.

No. 382 P.R.

Copy submitted to the Chief Engineer, Public Works Department, for sanction of Government.

2. The Executive Engineer has been ordered to expedite the submission of the estimates for items 9, 11, 15 and 17, as also revised estimate for item 6.

TRICHINOPOLY,
10th November 1892.

(Signed) A. C. SMITH, Lt.-Col., R.E.,
Superintending Engineer, VI Circle.

ORDER—dated 25th November 1892, No. 997 I., Public Works.

The proposed modifications of allotments are sanctioned.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Superintending Engineer, VI Circle.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated, November, 25th.

Recd. *Encl.*

G.O., 25th Nov. 1892, No. 997 I.

NOVEMBER.

Funds

Certain modifications of allotments proposed for works in No. II Periyár division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

No. 2123.

Report of progress of works in No. II Periyár division for the month of Oct. 1892.

I reach ($7\frac{3}{8}$ *miles*)—*Excavation.*—No work since last report. Orders are awaited to pay up the contractor and begin the remaining work.

Masonry.—Surplus sluice of 12 vents to Ramarajapuram tank I reach. Hand rails received on the 27th and being fixed. Work will be completed in a few days.

II reach ($7\frac{3}{8}$ *to* $10\frac{1}{2}$ *miles. Regulator* 7 *miles* 3 *furlongs*).— Articles from the workshop received on the 28th instant and work began. Completion report will be submitted shortly.

III reach ($10\frac{1}{2}$ *to* 17 *miles*).—*Excavation.*—Completed.

Masonry.—All masonry works completed in the reach except the run-off channel in rear of irrigation sluice 12th mile and extension of dry stone apron to superpassages, for which estimates are submitted for sanction. Other items completed. This reach may be considered finished.

IV reach (17 *to* $18\frac{1}{4}$ *miles*)—*Earthwork.*—Completed.

Masonry.—

(1) The new bridge at 17 miles 7 furlongs built up to string course, centring in progress. Wings raised to the bottom of blocking course.

(2) The iron trough at 17 miles 3 furlongs. Excavating foundations finished. Masonry commenced. Other items completed in this reach.

V reach ($18\frac{1}{4}$ *to* $20\frac{1}{2}$ *miles*)—*Excavation.*—Completed.

Masonry.—

No. I.—Iron trough aqueduct at 18 miles 6 furlongs, foundations nearly done. Superstructure, part commenced.

No. II.—Iron trough aqueduct at 19 miles, foundations done.

VI reach ($20\frac{1}{2}$ *to* 24 *miles*)—*Excavation.*—No work since last report, arrangements are being made to complete the reach by the end of the month. Only about 35 chains remain to be finished up.

Masonry.— The only masonry works now in hand in this reach are the two additional bridges recently sanctioned one at 20 miles 3 furlongs and the other at 23 miles 1 furlong and the 2 iron troughs aqueducts at 21 miles 7 furlongs and 24 miles 2 furlongs.

Centring to the 2 additional bridges and the foundations for the 2 troughs in progress. Well in hand.

Weir to Vedakulam Tank.—Almost completed. Rear apron in progress.

VII reach (24 *to* $26\frac{3}{8}$ *miles*)—*Excavation.*—Breach near Kannimar odai culvert being connected. Reach nearly completed.

Masonry.—

(1) Culvert at 24 miles 6 furlongs completed except a bit of 10 feet coping.

(2) Superpassage at 25 miles 4 furlongs completed except coping over all.

(3) *Culvert at 26 miles 3 furlongs.*—Concreting over tunnel completed and face walls built up. Banking in progress.

(4) *Bridge at 26 miles 4 furlongs.*—All work brought up to bottom of blocking course. Will be completed in a few days.

VIII reach ($26\frac{3}{8}$ to $27\frac{1}{2}$ miles)—Excavation.—Very little done during the month owing to monsoon and water.

Masonry.—Bridge and Regulator at 27 miles 4 furlongs skew backs over abutments and piers completed. Earth centring in progress; all other masonry works completed.

IX reach ($27\frac{1}{2}$ to 29 miles)—Excavation.—Blasting portions nearly completed. Progress slow owing to water in channel.

Masonry.—

(1) *Culvert at 27 miles 6 furlongs.*—No work during the month owing to water in channel and labour being drawn away for ploughing. The run-off channel was cut down to bed level and one side wall to the lower half of the tunnel was built for about 50 feet.

(2) *Culvert at 28 miles 2 furlongs.*—Face walls above arch work in progress. Work nearly completed.

(3) *Irrigation sluice 28 miles 4 furlongs.*—Foundations fully completed. Work delayed for labour not being available owing to rains.

(4) *Head sluice, IX branch channel.*— Centring nearly completed.

X reach (29 to $30\frac{1}{2}$ miles)—Excavation.—Completed except at vicinity of masonry works which will be finished this month.

Masonry.—

(1) *Culvert at 28 miles 7 furlongs.*—Work practically completed and the drain will soon be turned into it.

(2) *Irrigation sluice, 29 miles 3 furlongs.*—Foundations fully completed. Work stopped owing to frequent heavy showers during the month.

(3) Culvert at 29 miles 4 furlongs completed.

(4) *Head sluice, X branch channel.*—All work brought up to 2 feet height in superstructure.

(5) *Bridge at 30 miles 1 furlong.*—Very little work done during the month owing to rain and heavy floods.

XI reach ($30\frac{1}{2}$ to 36 miles)—Excavation.—Work in 1—20 and 75 to 112 chains cut to bed level and work stopped owing to water filling in channel.

Branch channels 1 and 2 completed.

3 completed.

Fourth branch channel.—All masonry works completed except shutter portions. Thandalay branch of the IV branch channel.

Excavation.—Sixth mile in progress. All masonry works completed except putting up shutters.

Minor distributaries from Thandalay branch.—Earthwork in progress.

Fifth branch channel—Excavation.—Third mile in progress.

Masonry.—Road tunnel at 5 furlongs in progress. All other masonry works completed.

Sixth branch channel—Excavation.—Nearly finished. Blasting rocky portions in progress.

Masonry.—

Fall No. 4 in progress; other falls completed. Head sluice to VI branch channel completed except putting up shutters.

Seventh and eighth branch channel not begun.

Ninth branch channel—Excavation.—First nine miles in progress.

Masonry.—

No. 1 *fall* one side masonry work raised to 3 feet above foundation.

Nos. 2, 3, 4 *and* 5 *falls.*—Excavating foundations in progress.

No. 6 *fall.*—Covered wings raised to 3 feet above foundations.

No. 7 *fall.*—Covered wings and body wall raised to 2 feet above foundation.

No. 8 *fall.*—Excavating foundations in progress irrigation sluices 3 mile work put in hand.

General.—The progress of works was slow for about 15 days in the month owing to labour being drawn away—

(i) for ploughing.
(ii) for Deepavali feast.
(iii) a great festival at Thiruparangundram.
(iv) by monsoon.

Average rainfall during the month is 9 inches.

MADURA,
4th November 1892.

(Signed) J. W. H. ELLIS,
Asst. Engr. in ch. of No. II Periyár Division.

No. 377 P.R.

Copy submitted to the Chief Engineer, Public Works Department.

TRICHINOPOLY,
7th November 1892.

(Signed) A. C. SMITH, Lieut.-Col., R.E.,
Superintending Engineer, VI Circle.

ORDER—dated 28th November 1892, No. 998 I., Public Works.

Recorded and communicated to the Government of India.

[Here enter No. 999 I., Public Works, dated 28th November 1892.]

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Superintending Engineer, VI Circle.
" Chief Engineer for Irrigation.
" Revenue Department.

ENDORSEMENT—dated 28th November 1892, No. 999 I., Public Works.

Copy of the above forwarded to the Government of India.

(By Order.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 28th.

Recd. *Encl.*

G.O., 28th Nov. 1892, Nos. 998, 999 I.

NOVEMBER.

Periyar Project

Forwarding copy of Proceedings recording the progress report of works in No. II Periyár division for 1892.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

No. 170 C.E.

Progress Report for September 1892.

Delay in submission.—This report is late this month, because the undersigned had a good deal of urgent work in the early part of the month and has latterly been prostrated with a severe attack of fever.

2. *General.*—The month was an excellent one for work, being uniformly fine and free from floods, but much of the available labour was still being employed in repairing the damages caused by the flood of July 24 and the manufacture of "surkhi" could only proceed with rapidity from the commencement of the fine weather in September, so that progress was not so good as it otherwise would have been.

3. *Health.*—The following table gives the month's statistics :—

Camp.	Population.	Total treated.	Deaths.	Ratio per 1,000.	
				Sick.	Deaths.
Periyár	2,970	336	7	135·21	2·81
Thekady	1,080	332	..	307·41	.. .

Of the deaths at Periyár, 3 were due to fever and ague, 3 to dysentery and diarrhœa, and 1 to dropsy. The finer weather brought some remission of fever, but there has been a good deal of sickness in the camps altogether, and, as stated in the progress report for August, an attempt will be made to house the coolies better next season.

4. *Rainfall.*—

	INCHES.
Periyár	2·39
Thekady	0·48

No floods occurred during the month.

5. *Main Dam.*—

	CUBIC FEET.
Rubble	63,151
Concrete	2,092
Earthwork	79,954

The progress made in rubble is the best on record; with the exception of a diagonal wall on left flank, the whole of it was employed in either raising or thickening the front wall. The pocket on right flank was excavated down to good hard rock at a level of +13, and construction with rubble masonry was commenced on 27th of the month. This pocket has given a great deal of trouble, and it is feared that the extension of it down stream will give still more, but it makes an excellent key for the new work and will be a source of strength rather than weakness.

The progress with concrete during the month has been very small, partly owing to that portion of the dam where concrete laying is at present possible being very limited in area, but principally because the available surkhi only just sufficed to keep the rubble work going.

The Chief Engineer complains in his notes on the progress report for August on the unsatisfactory progress in that month, and says that the real cause of it was "the neglect to provide a sufficient stock of surkhi during the dry months." He also

says that "a rainfall of 7½ inches during the month is not so excessive as to prevent a satisfactory amount of work from being done, and has not done so in previous seasons." With regard to the surkhi, it was, no doubt, a mistake not to manufacture it during the recess. The undersigned purposely prohibited it, because it requires a good deal of supervision, which was not available, and, being new to the work and the climate, he did not realise how impossible it was to manufacture surkhi during the monsoon months; but in making the remarks above quoted, the Chief Engineer ignores two facts—

(1) That the rainfall of last August, although amounting in the aggregate to only 7½ inches, was spread over 30 days out of the 31, and was considerably the wettest August since the commencement of the project.

(2) That there was a similar lack of surkhi last year and the progress made was only possible by laying concrete without it. The work so done will probably always be a weak spot in the dam, because it has been proved conclusively that this lime does not set properly without admixture of surkhi, and certainly no work will be done without it or portland cement so long as the undersigned has charge of this project.

The earthwork executed during the month was all on right flank, in clearing the pocket above referred to and in removing earth at higher levels. Good progress has been made in this.

6. *Right Bank Escape.*—The following materials were got out :—

	CUBIC FEET.
Rubble	64,114
Broken stone	8,526
Earthwork	81,260

1 lb. of explosive produced 102 cubic feet of stone.

Progress somewhat restricted because the quarry is full of stone waiting to be conveyed to the dam.

7. *Workshops.*—Retaining wall in rear completed, 1,986 cubic feet of rubble being laid for the purpose. Drains laid in ground floor. Erection and fitting of hoist at east end to raise broken stone and mortar from the conveyors to the wire rope-way completed. This is an ingenious and successful device invented by Mr. Logan, Workshop Superintendent, and reflecting great credit on him. Wire rope-way put into thorough order including a wooden 8 feet angle pulley with iron spokes intended to temporarily replace the pulley broken by the flood of July 24.

8. *Buildings.—Sub-Magistrate's Court and quarters, Police lines and Post Office.*—Walls taken up to full heights and rafters fitted in Sub-Magistrate's quarters.

Apothecary's quarters at Thekady nearly completed.

Improvements to hospital.—Foundation and basement completed.

Government Rice Bazaar.—Site levelled.

9. *Water-shed cutting.*—The 6 inches centrifugal pump fixed in lieu of 8 inches pump lost in the flood of July 24; baled the water out and enabled the clearance of silt brought in by the flood to proceed. Rock excavation cannot recommence until silt is removed.

10. *Water-shed Tunnel.*—Progress for the month.

	FEET.
North end	70
No. II Shaft—	
North face	38
South „	42
No. I Shaft	23
Total ...	173
Total to date ...	2,912
Balance to be done ...	2,701
Total ...	5,613

Work at north end only began on 15th of the month, no water being available before that date. Four working days were lost at No. 2 shaft owing to an accident to the winding machinery.

11. *Wire Tramway.*—This commenced work during the month, first without load and then with buckets carrying half load. The higher posts oscillated a good deal, throwing the buckets off the rope, and the latter sagged so much with the heat of the sun and the weight of the half loaded buckets that all the cuttings through ridges had to be considerably deepened. The tramway will take some time to get into thorough working order, but should then work smoothly enough. Another 100 buckets will be required.

12. *Mulyapanjan Canal.*—Breaches at Nos. 1 and 2 locks and No. 1 dam caused by the flood were closed during the month, and the gunny bag bund below wharf was half built. Canal was in working order early in October, but the bund at wharf has breached again and navigation is only possible as far as No. 2 dam. This will be referred to in progress report for October.

13. *Periyár-Thekady road.*—Energetic measures have been taken to keep the road in working order to which the fine weather has contributed, but it would certainly pay to metal the whole road throughout with 6 inches of metal, and an estimate for this is now being prepared.

14. * * * * *

PERIYAR,
27th October 1892.

(Signed) W. B. DEWINTON,
Supdt. of Works, No. I Periyár Division.

To the Chief Engineer, Public Works Department.

ORDER—dated 28th November 1892, No. 1000 I., Public Works.

Recorded and forwarded to the Government of India.

2. Para. 14 of the report, which does not deal with the progress of the work during the month, will be considered separately.

(Here enter No. 1001 I., Public Works, dated 28th November 1892.)

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Superintendent of Works, Periyár Project.
" Chief Engineer for Irrigation.
" Revenue Department.

ENDORSEMENT—dated 28th November 1892, No. 1001 I., Public Works.

Copy of the above forwarded for the information of the Government of India.

(By Order.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 28th.

Recd. *Encl.*

G.O., 28th Nov. 1892, Nos. 1000, 1001 I.

NOVEMBER.

Periyar Project.

Forwarding copy of Proceedings recording, with remarks, the progress report of works in No. I Periyár division for September 1892.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From the Deputy Secretary to the Government of India, Public Works Department (Civil Works—Telegraph), to the Secretary to the Government of Madras, Public Works Department, dated Simla, the 9th November 1892, No. 279 T.

With reference to para. 3 of Public Works Department letter No. 159 T., dated the 22nd August 1892, I am directed to forward, for information, a copy of the correspondence noted below with the Director-General of Telegraphs on the subject of the closing of the account of the Telegraph department in connection with the Kurnool-Cuddapah canal telegraph line which has been ordered to be dismantled.

2. I am to ask that the necessary provision of about Rs. 35,000* may be made under the head "42. Major Works, Working Expenses" of the Madras Irrigation budget for 1892–93.

* Rs. 36,600 — Rs. 1,460 = Rs. 35,140.

Enclosures.

From the Government of India, Public Works Department, to the Director-General of Telegraphs, dated 22nd August 1892, No. 161 T.

With reference to para. 3 of Public Works Department letter No. 159 T. of this day's date, to the address of the Government of Madras, a copy of which accompanied this office No. 160 T. of the same date to your address, and to the Proceedings of the Madras Government, Nos. 585 and 586 I., dated 5th July 1892, a copy of which is enclosed, I am directed to say that the proposal of the Madras Government to accept in perpetuity a charge of Rs. 1,460 per annum against the Revenue Account of the Kurnool-Cuddapah canal for interest payable to the Telegraph department on the capital expended on the telegraph line along that canal which has been ordered to be dismantled does not commend itself to the Government of India.

2. The Government of India is of opinion that after the line has been dismantled the account should be closed by an adjustment in favour of the Telegraph department based on the capital cost of the line in question, *plus* the expense of dismantling it and *less* the value of the material returned to stock. I am accordingly to ask that an account on this basis may be prepared and submitted to the Government of India.

It is observed that in your letter No. 8128, dated 23rd March 1892, to the Superintendent, Madras Division, you stated that the adjustment would amount to about Rs. 36,600, but details of this should be furnished.

From the Director-General of Telegraphs, to the Government of India, Public Works Department, dated 31st October 1892, No. 80 T.

With reference to your reminder No. 161/1 T., dated the 12th instant, I have the honour to point out that the closing of the account of the Telegraph department in connection with the Kurnool-Cuddapah canal telegraph line is not possible until the line has been dismantled.

2. As I do not understand that there is any great urgency in connection with the settlement of this account, I had intended to carry out the work of dismantling as convenient with reference to other works and the most favorable time of year for work in this district. This would result in the account being closed next January, but I can at some inconvenience arrange, if I am instructed to do so, to close the account by the 15th December 1892.

From the Government of India, Public Works Department, to the Director-General of Telegraphs, dated 9th November 1892, No. 278 T.

I am directed to acknowledge the receipt of your letter No. 80 T., dated the 31st October 1892, and in reply to say that the Government of India has no objection to your proposal to delay closing the account of the Telegraph department in connection with the Kurnool-Cuddapah canal telegraph line until the line has been dismantled, and to carry out the dismantling as may be found most convenient with reference to other works.

ORDER—dated 28th November 1892, No. 1002 I., Public Works.

Communicated to the officers concerned for information in continuation of G.O., No. 755 I., dated 3rd September 1892.

2. As there are no funds available to meet charge to the Kurnool-Cuddapah canal on account of the telegraph line, the Government of India will be requested to sanction an additional grant of Rs. 35,000 under 42. Major Works, Working Expenses.

3. The following letter will be sent to the Government of India.

[Here enter No. 1003 I., Public Works, dated 28th November 1892.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, III Circle.
,, Examiner, Public Works Accounts.
,, Superintendent, Government Telegraph, Madras Division.
,, Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 28th.

Recd. *Encl.*

G.O., 28th Nov. 1892, No. 1002 I.

NOVEMBER.

Kurnool-Cuddapah Canal Telegraph Line

Letter from the Government of India on the subject of closing the account of the Telegraph department in connection with the —, communicated to the officers concerned and the Government of India to be requested to sanction an additional grant of Rs. 35,000 to meet the charge to the same for 1892–93.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

LETTER—from

LIEUT.-COLONEL R. R. E. DRAKE-BROCKMAN, R.E.,
Acting Joint Secretary to Government,
Public Works Department,
Irrigation Branch,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

SIR,

With reference to para. 2 of your letter No. 279 T., dated the 9th instant, I am directed to request that as no portion of the existing grant under 42. Major Works, Working Expenses, can be spared to meet the charge to the Kurnool-Cuddapah canal on account of the telegraph line, an additional grant of Rs. 35,000 may be sanctioned, raising the existing grant of Rs. 11,96,000 to Rs. 12,31,000. The statement required to accompany applications for additional grant is enclosed.

I have the honour to be,
Sir,
Your most obedient servant,

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

FORT ST. GEORGE,
28th November 1892.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 28th.

Recd. *Encl.*

28th November 1892, No. 1003 I.

NOVEMBER.

Kurnool-Cuddapah Canal Telegraph Line

Requesting to sanction an additional grant of Rs. 35,000 to meet the charge to the — for 1892–93.

Accompaniment to letter No. 1003 *I., Public Works, dated* 28*th November* 1892.

STATEMENT to accompany application for an additional grant of Rs. 35,000 under 42. Major Works, Working Expenses, for 1892–93.

Amount of expenditure in the year for which sanction is asked.	Major and Minor heads under which the expenditure will fall with amounts of sanctioned grants under each.	Probable expenditure in the whole year under the grants mentioned in column 2 if the expenditure in column 1 is sanctioned.	Major and Minor heads under which it is proposed to reduce the grants with the sanctioned grants under each.	Probable expenditure in the year under the heads mentioned in column 4.	Amount by which it is proposed to reduce the grants under the heads mentioned in column 4.	Explanation if no reappropriation is considered possible, in such cases the urgency and necessity for the outlay must also be explained.
1	2	3	4	5	6	7
RS.		RS.	RS.	RS.	RS.	
35,000	42. Major Works Working Expenses Rs. 11,96,000.	12,31,000	*Nil.*	*Nil.*	*Nil.*	Required to meet the charge to the Kurnool-Cuddapah canal on account of the telegraphic line.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From J. W. MARTIN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 13th September 1892, No. 1466 K.S.

I have the honour to forward, herewith, for your approval and the sanction of Government, plan and estimate for constructing a rolled iron girder bridge at 16 miles 41 chains on Tungabhadra drain near Ponnur, amounting to Rs. 11,800.

2. The Executive Engineer's report accompanying explains fully the necessity for the above work.

ENCLOSURE.

REPORT to accompany estimate for constructing a rolled iron girder bridge at 16 miles 41 chains, Tungabhadra drain, near Ponnur.

1. This bridge is intended to span the straight cut on the Tungabhadra drain excavated in 1887–89 and to carry the Ponnur-Tsandole road.

2. There is an existing bridge over the old line of the drain.

3. Since the straight cut was excavated, the traffic has been carried by a temporary palmyra bridge. These temporary bridges have collapsed and been renewed three or four times.

4. The road is an important one, there is heavy traffic on it and a permanent bridge is a necessity.

5. The straight cut has been excavated to a bottom width of 25 feet. This is inadequate, especially as the head of the old course of the drain has been blocked. There is, however, no immediate prospect of the straight cut being widened. The bridge will have two spans of 20 feet each as ordered in Superintending Engineer's No. 2844 K.S., dated 29th February 1892.

6. On the west of the drain the Srirangapuram channel runs close to the drain, so no side drainage has to be provided for. On the east of the drain there are deep side drains situated 50 feet from the centre line of the road. Provision has been made for passing the water from these side drains into the main drain.

7. The sub-soil is very sandy, so well foundations have been provided. The wells will be 6½ feet in height with tops laid at + 4·50.

The wells under the abutments and pier will be 6′ × 6′ in section, those under the wing walls will be 6′ wide, but will vary in length to suit the thickness of the wing walls. All wells will be spaced 8″ apart.

8. The bottom curbs will consist of two layers of 1½″ planking, breaking joint fastened together with 5″ nails driven well home with their ends turned down and clinched.

The top curbs will consist of a single layer of 1½″ planking half cut away at the joints and fastened with 2½″ nails.

9. Each block of wells will be built at the same time, plastered inside and outside and allowed 14 days to set, during which time they will be carefully watered. They will then be sunk altogether or consecutively as labour may be available, but no well will be sunk more than 3 feet below the well next to it.

They should be plastered on the outside only.
J.W.M.

10. The correct bed level of the drain at this point is + 7·90, but the floor of the bridge will be placed at + 6·00. The bed has scoured out to this level and it is advisable to allow for possible future deepening of the drain.

11. The abutments have been made 3′ 6″ thick, *i.e.*, the same thickness as the pier. The Srirangapuram channel on the right or west bank will prevent any widening of the drain on that side, but, if it is found necessary to widen the drain on the left, it can be easily done by demolishing the wing walls and converting the abutment into a pier.

12. Aprons and revetments have been provided with a view to preventing any scour below floor level or between the bridge and the side drains.

13. The masonry will be rubble in mortar faced with dressed faces.

14. The roadway will have a clear width of 13′ and will be carried in three rolled iron girders. The centre girder will be 14″ × 6″ and each side girder 12″ × 5″. These girders will rest on wrought-iron and cutstone bed plates and will support Horbury's patent ¼″ flooring plates, which will be covered with ½″ of asphalte to protect them from rust. The sides will be protected by wheel guards and railings of 1″ gas piping fixed to ┬ iron standards.

15. The travelling load has been taken as 80 lb. per square foot, metalling 120 lb. per cubic foot, Horbury's flooring 15 lb. per square foot, length of girders, 21½ feet—

Travelling load, 80 × 13′ × 21—5′	=22,360
Metal, 120 × 13′ × 21—5′ × 1′	=33,560
Flooring, 15 × 13′ × 21—5′	= 4,192
Total lb.	60,092 or
tons	27

say, 1·4 tons per foot run of clear span with three girders: the centre one will carry 0·7 tons and each of the side ones 0·35 tons per foot run and the total loads will be 14 tons and 7 tons, respectively.

16. Funds can be met from the lump sum provision of Rs. 73,775 for masonry works on the Tungabhadra drain (*vide* G.O., No. 447 I., dated 9th May 1892).

17. The drainage discharge to be passed at the site of the bridge is—

	C. FT. PER. SEC.
130 square miles upland drainage above the Commamur canal ...	14,035
30 „ „ below the „ ...	4,342
Total ...	18,377

This volume × ⅕ for discharge in 6 days and again × ⅓ for tentative discharge gives a total tentative discharge of 1,021 cubic feet per second.

As the drain has a bed fall of 1 foot per mile with depth of water 7 feet, the channel should have a bottom width of 42½ feet against an existing bottom width of 25 feet.

30th August 1892.

(Signed) A. A. G. MALET,
Ex. Engr., Kistna Western division.

No. 195 I.

Submitted to Government, with the recommendation, that sanction may be accorded to the estimate, amounting to Rs. 11,600, as altered in this office, the width of stone floorings having been reduced to 6 feet, except opposite the road drain shoots, where the stone floorings will be 10 feet wide for a length of 20 feet.

2. The amount of the estimate may be met from the lump sum of Rs. 73,775 provided for masonry works on the Tungabhadra drain in the statement printed at page 7 of Proceedings of the Madras Government, No. 447 I., dated 9th May 1892.

CHEPÂK,
21st Nov. 1892.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 28th November 1892, No. 1004 I., Public Works.

The following estimate, amounting to Rs. 11,600, for a rolled iron girder bridge at 16 miles 41 chains of the Tungabhadra drain in the Kistna Western division, is sanctioned from the lump sum of Rs. 73,775 provided for masonry works on the drain :—

49. Capital Expenditure on Irrigation Works
not charged to Revenue.
Kistna Delta System.
Western Division.
(4) Drainage and Protective Works.
Tungabhadra Drain.
C. Works.

	RS.
Rolled iron girder bridge at 16 miles 41 chains near Ponnur, estimate.	11,600

2. This sanction is registered as No. 138 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, with 4 enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 28th.

Recd. *Encl.*

G.O., 28th Nov. 1892, No. 1004 I.

NOVEMBER.

Kistna Delta System

Bridge.—Estimate of Rs. 11,600 for a rolled iron girder — at 16 miles 41 chains of the Tungabhadra drain near Ponnur, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From J. W. MARTIN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 29th October 1892, No. 1882 K.S.

I have the honour to forward, for your approval and sanction of Government, an estimate, amounting to Rs. 7,700, for constructing a bridge with rolled iron girders over the Pedalanka drain to carry the Bantumilli-Gudiváda road.

2. In the revised estimate for the Pedalanka drain sanctioned in G.O., No. 546 I., dated 18th June 1892, a lump sum, amounting to Rs. 5,000, is provided for the bridge, but as this is not sufficient the difference, Rs. 2,750, between it and the amount of the estimate now submitted must be debited to the balance available for the unforeseen works of the Kistna delta system.

3. In case you approve of the plan and estimate, I request you will be good enough to ask Government to approve of the iron work being purchased from Messrs. Massey and Company, Madras. Their price for the iron work, complete, delivered at Madras, is considerably less than Messrs. Richardson and Cruddas, Bombay, asked for the iron work delivered at Masulipatam. The iron work can be easily sent from Madras to Bezváda by the Buckingham Canal.

ENCLOSURE.

Report to accompany estimate for a rolled iron girder bridge across Pedalanka drain.

	RS.
Amount of estimate	7,200

Kaldindi Kodu having been converted into a drainage channel has to be widened sufficiently to carry off the drainage water of the lands between the Bantumilli and Polraz canals in addition to 300 cubic feet a second surplussed into it from the Pulleru at Cowtaram.

At the point where Kaldindi Kodu (now the Pedalanka drain) crosses the Bantumilli road, the bottom width will have to be 52 feet and it is therefore necessary to replace the present arch by a bridge giving a water-way proportionate to the increased quantity of water which the channel will have to carry.

The present design submitted for approval and sanction is similar to the bridge already sanctioned across the Polraz drain except that the spans proposed are 18 feet instead of 20 feet. The discharge past the bridge is estimated at 950 cubic feet per second, of which 650 cubic feet is presumed to be due to the local drainage.

Three spans of 18 feet with a depth of 4½ feet of water will discharge this quantity with a velocity of 3·91 feet per second. The subsoil at the site of the bridge is ordinary delta alluvium and the foundations being similar to those of the bridge over Polraz drain, which is to be built on black cotton soil, are considered ample. The superstructure consists of 3 rolled steel beams of I section, the central beam is to be 15″ × 6″ and the side beams 12″ × 5″ carrying Hurbury's patent iron arch flooring over which the metalling will be spread. With the plans of the bridge a site plan is submitted showing the present and the proposed alignment of the channel.

(Signed) A. CHATTERTON,
Executive Engineer, Gudiváda Division.

The effective span, as regards load, may be taken as 19 feet, and then the load on the bridge will be made up as follows :—

		lb.
Gravel	19′ × 14′ × 1′ × 120 =	31,920 lb.
Travelling load	19′ × 14′ × 80 =	21,230 „
H.C.W.J. flooring	19′ × 14′ × 15 =	3,990 „
	Total wt. = 57,190 lb. or 25·5 tons.	

The girder in the centre will carry double the load the girder on each side will bear. In fact the girder in the centre will carry half the total load or 25·5/2 = 12·75 tons, and each side girder will carry 12·75/2 = 6·38 tons. A girder 14″ × 6″ will carry 18 tons, the clear span being 18 feet and a girder 12″ × 5″ will carry 12 tons, the span being 18 feet. These girders will not be too strong if concussion caused by heavy bandies, &c., be taken into account.

(Signed) J. W. MARTIN,
Superintending Engineer.

No. 194 I.

Submitted to Government with the recommendation that the estimate amounting to Rs. 7,200 as reduced in this office by reducing the length of wings as indicated in red ink on the plan may be sanctioned.

CHEPÂK, (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
18th November 1892. Ag. Chief Engineer for Irrigation.

To the Ag. Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 28th November 1892, No. 1005 I., Public Works.

The following estimate, amounting to Rs. 7,200, for constructing a bridge over the Pedalanka drain to carry the Bantumilli-Gudiváda road in the Gudiváda division is sanctioned in lieu of the provision of Rs. 5,000 made for a bridge in the estimates for the drain sanctioned in G.O., No. 546 I., dated 18th June 1892, the excess of Rs. 2,200 being met from the balance of the amount reserved for unforeseen works of the Kistna Delta System which will then be reduced to Rs. 55,910.

49. Capital Expenditure on Irrigation Works not charged to Revenue.
Kistna Delta System.
Gudiváda Division.
43. Drainage and Protective Works.
Pedalanka Drain.
C. Works.

	RS.
Rolled iron girder bridge to carry the Bantumilli-Gudiváda road, estimate	7,200

2. This sanction is registered as No. 139 I. of 1892–93.

3. The purchase of the iron work required for the bridge from Messrs. Massey and Company, Madras, is authorised.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle, with 5 enclosures.
„ Examiner of Public Works Accounts.
„ Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 28th.

Recd. *Encl.*

G.O., 28th Nov. 1892, No. 1005 I.

NOVEMBER.

Kistna Delta System

Bridge.—Estimate of Rs. 7,200 for constructing a rolled iron girder — to carry the Bantumilli-Gudiváda road over the Pedalanka drain sanctioned, with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

No. 184 C.E.

Progress Report, October 1892.

General.—Although rain fell daily from 12th to 31st, the month has been more favorable for work than October usually is on these hills and has been entirely free from floods.

The works were visited by His Excellency the Governor of Madras on 12th, 13th and 14th, by whom a stone was laid in the rear face of the dam at +28.

2. *Health.*—There has been a great deal of sickness during the month, principally fever and ague, especially at Thekady. Statistics are given below :—

Camp.	Population.	Total treated.	Deaths.	Ratio per 1,000 of population.	
				Sick.	Deaths.
Periyár	2,914	326	9	111·87	3·08
Thekady	1,061	429	3	405	2·82

Of the deaths 7 were due to ague, 1 to dropsy, 1 to an accident (the wheel of a heavy trolly ran over a man's body), and 3 were infants.

3. *Rainfall.*—

	INS.
Periyár	6·29
Thekady	5·93

Rain fell on 27 days at Periyár and on 18 at Thekady, the latter half of the month being much the wettest owing to a late and final burst of the south-west monsoon.

4. *Main dam.*—Progress made is as follows :—

	C. FT.
Rubble	57,466
Concrete	22,971
Excavation of foundations chiefly boulders and disintegrated rock.	24,953

The amount of rubble and concrete completed is more than three times the net progress in October 1891 and in rubble the progress made has been good and is almost entirely confined to raising and thickening the front wall. In concrete progress was retarded for the following reasons :—

(1) A sufficient supply of surkhi was not available till the 4th of the month.

(2) The vertical shaft of the turbine was found to be out of plumb owing to the sagging of one of the teak beams on which it rests. This was rectified with a

great deal of labour and trouble, but it was a tedious business occupying 9 days, during which the workshops were of course at a standstill and laying concrete was only possible with broken stone obtained from the quarry and mortar from the bullock mills. By the end of the month the arrangements for laying concrete were in much better order and November will, if free from floods, show, it is hoped, greatly improved progress. The excavation of foundations on right flank proceeded steadily during the month and good hard rock is appearing everywhere except between + 35 and + 55 where there is an extensive fault or series of faults, out of which the boulders and disintegrated rock excavated during the month were taken. There may be some difficulty in obtaining a good foundation here.

5. *Workshops.*—The turbine was set to rights as above stated, the operation involving the realignment of both vertical and horizontal shafting. One new mortar pan mill to be driven by the turbine was erected and in working order and another was commenced. 20,000 cubic feet of broken stone and 8,500 cubic feet of mortar were sent out to the dam during the month.

6. *Right bank escape.*—The outturn of the month comprised—

	C. FT.
Rubble	66,307
Broken stone	8,499
Earthwork	54,725

1 lb. of explosive producing 125 cubic feet of stone.

7. *Water-shed cutting.*—Nearly all the silt, a large quantity, brought in by the flood of 24th July was removed and rock excavation recommenced in a very systematic manner, which promises excellent results. A great deal of time has been unavoidably spent in getting rid of flood-water and silt, but now that work is in full swing again it is hoped that each succeeding month will show greater progress.

8. *Water-shed tunnel.*—The total progress here for the month is 247 feet made up as follows :—

	FT.
North end	119
No. 2 shaft—	
North	53
South	52
No. 1 shaft	23
Total ...	247

The best previous month was November 1891, when 205 feet were excavated, so this month's work beats the record handsomely and reflects great credit on the Sub-divisional officer Mr. Allen and his able tunneller Mr. Mathews. We shall do still better in November *if* the water holds, but of this there is very great doubt. The new Roots boiler at No. 2 shaft is working well and 4 drills have been at work here throughout the month, but the steam power is even now insufficient to keep them going continuously. Total progress to date is shown below :—

	FT.
Total length of tunnel	5,613
Total progress to date	3,159
Balance ...	2,454

9. *Wire tramway.*—This tramway has at length been used for transport and has conveyed 17,338 cubic feet of limestone and surkhi from Kuruvanuth to Thekady, a very fair beginning, considering the numerous difficulties to be contended with at starting and referred to in last month's report. It is a great pity that this tramway was not continued to Periyár and driven by steam. It would have saved a vast amount of expenditure on canal and road and rendered us independent as regards transport of the weather. It is probably too late now, but an estimate of the cost of extending it will be made.

10. *Mulya Panjan canal.*—This canal was in thorough working order from Thekady to the wharf on October 15th and carriage of limestone had commenced. The new earth and gunny bag bund below the wharf had been completed on that date and was holding up full supply apparently with ease. On 16th it was reported to have settled slightly and on 17th morning it subsided in the centre, and, the bags sliding rapidly on one another, a breach 20 feet wide was soon formed and all the pent up water escaped. It is difficult to account for this failure, because the bund, as designed and sanctioned, was not only of sufficient dimensions to withstand the theoretical pressure to which it was exposed, but was made in the course of construction of even greater dimensions than those sanctioned and the gunny bags were protected in front by a thick bank of well-rammed earth. The failure is presumably due to the nature of the foundations which were partly rock and partly boggy earth and sand. There must have been subsidence of that portion of the bund resting on the latter, although every endeavour was made to prevent percolation through it by sheet piling, and, when this subsidence occurred, the bags must have been displaced and commenced sliding on each other and on the rock. Every care was taken in the construction of the bund, the sub-divisional officer spending most of his time on it and the undersigned visiting it almost daily ; but it is probably a mistake to attempt to hold up great depths of water (there were 20 feet against this bund) with gunny bags, because their co-efficient of friction is small and possibly even smaller than is supposed. Only a small portion of the bund in its centre failed, but it was sufficient to unwater the reach, and the undersigned does not propose to make any further attempt to hold up water in this lowest reach of the canal, because the cost of doing so is greater than the benefit derived. The boats are, therefore, working as far as No. 2 dam and have carried 12,448 cubic feet of limestone and surkhi during October, the material being conveyed thence to Periyár, a distance of 2½ miles, by road. The remaining bunds on the canal constructed to remedy the damage done by floods are all intact.

11. *Periyár-Thekady road.*—Work during the month has been confined as much as possible to urgent repairs, because the cost of maintenance for the year, owing to the heavy rainfall, is becoming excessive, but the road never having received a proper coat of metal requires much labour to keep it passable for the heavy traffic.

12. *Buildings.*—Good progress was made during the month with all those under construction or repair.

PERIYAR,
11th November 1892.

(Signed) W. B. DE WINTON,
Supdt. of Works, No. I Periyár Division.

To the Chief Engineer, Public Works Department.

Note by the Acting Chief Engineer, Public Works Department.

Submitted for the information of Government.

2. The progress during the month was satisfactory, especially so on the "main dam" and the tunnel.

3. The gunny-bag dam, the destruction of which is described in para. 10 of the report, was sanctioned in G.O., No. 777 I., dated 14th September 1892. It is by no means improbable that the cause of the collapse was a tearing open of some of the bags due to movement resulting from settlement of the foundations.

(Signed) G. T. WALCH,
Acting Chief Engineer, P.W.D.

24th November 1892.

ORDER—dated 29th November 1892, No. 1007 I., Public Works.

Recorded and forwarded to the Government of India.

[Here enter No. 1008 I., Public Works, dated 29th November 1892.]

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Superintendent of Works, Periyár Project
" Revenue Department.

ENDORSEMENT—dated 29th November 1892, No. 1008 I., Public Works.

Copy of the above forwarded for the information of the Government of India.

(By Order.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 29th.

Recd. *Encl.*

G.O., 29th Nov. 1892, Nos. 1007, 1008 I.

NOVEMBER.

Periyar Project

Forwarding copy of Proceedings recording the progress report of works in No. I Periyár division for October 1892, together with a note thereon by the Chief Engineer, Public Works Department.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 24th September 1892, No. 590 T.N.

I have the honour to submit, for your approval and sanction of Government, a fresh estimate, amounting to Rs. 3,850, accompanied by report and plans, in lieu of one of Rs. 2,900, returned for revision with your memorandum No. VI/12 T.N., dated 5th April 1892, for providing jib crane to lift the falling shutters of Upper Odai dam of Korampallam tank, Srívaikuntham anicut system.

2. It will be now seen that, in the present estimate, provision is made for S.I.R. rails at a cost of Rs. 406 at one rupee per lineal yard against Rs. 782 allowed in the former estimate.

Enclosure.

Report to accompany estimate for providing a jib crane to raise the drop shutters of the Korampallam tank surplus sluices.

	RS.
Amount of estimate	3,850

The want of some mechanical appliance to lift the 48 shutters each 10 feet by 6 feet to 8 feet has long been felt as it takes a gang of 14 men every time and 20 minutes to deal with each vent.

2. Colonel Fraser sent a sketch for a rachet wheel lever arrangement with spokes to Messrs. Burn and Co., Calcutta, who replied as follows :—

"We have your favour No. 139 of 18th instant. We have thought the matter over and do not think any really handy appliance for attachment to piers could be made and we enclose a drawing No. 7890 of a very light wrought iron crane travelling on a trolly or bogie 3′ 3⅜″ gauge between rails which we think would be the handiest apparatus to use. The sweep of jib is 13 feet; this might be slightly reduced in manufacture if the chain laid hold of the gates a little lower down at A, say, to 11′ 6″ sweep. We could make such a crane and trolly for the sum of Rs. 1,080. The jib would revolve and the crane would be of great utility in shipping and unshipping the baulk shutters as well. The line of rails for it to run upon would be required, probably you have rails on the work sufficient for the purpose ; but, if not, we could let you have 36 lb. rails (per yard) flat-footed I.S.Ry. section new at Rs. 120 per ton."

3. The original estimate provided for a jib crane as in the sketch and for laying a line of rails over concrete floor, but, as it was thought that the fastening of the rails into the concrete floor would be of weak construction, the estimate returned with Superintending Engineer's No. 24, T.N., dated 11th April 1892, has been revised from Rs. 2,900 to Rs. 3,850. It is proposed in this revised estimate to anchor the wooden sleepers into the cutstone fenders by Lewis' holding down bolts run round with lead as shown in the accompanying sketch and then to spike the rails to the longitudinal wooden sleepers.

4. As desired by the Chief Engineer in his memo. No. VI/12 T.N., dated 5th April 1892, provision is made in this estimate for S.I.R. rails.

Specification.—The rails will be laid as shown in the drawing on longitudinal jungle (congoo) wood sleepers on the concrete surface of the roadway of the bridge and secured by screwing bolts and spikes to the sleepers.

(Signed) G. W. FAULKNER,
Executive Engineer.

13th September 1892.

From G. W. FAULKNER, Esq., Executive Engineer, Tinnevelly division, to the Superintending Engineer, VI Circle, dated 29th October 1892, No. 3675.

With reference to your No. 690 T.N. of 23rd instant, I have the honour to report that each large shutter weighs about 1,970 lb. and that there is a bridge over the surplus weir without parapets.

No. 711 T.N.

Copy forwarded to the Chief Engineer for Irrigation with reference to his No. VI/41 T.N., dated 18th October 1892.

TRICHINOPOLY, 3rd November 1892. (Signed) A. C. SMITH, Lt.-Col., R.E., Superintending Engineer, VI Circle.

ORDER—dated 30th November 1892, No. 1012 I., Public Works.

The following estimate is sanctioned :—

42. Major Works (Working Expenses).
Srívaikuntham Anicut System.
Tinnevelly Division.
Extensions and Improvements.
(2) Main Canals and Branches.
N. Tanks and Reservoirs.
Korampallam Tank.

	RS.
Jib crane to lift falling shutters of Upper Odai dam, estimate ...	3,850

2. This sanction is registered as No. 140 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Ag. Joint Secy. to Govt., P.W.D., Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle, with five enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 30th.

Recd. *Encl.*

G.O., 30th Nov. 1892, No. 1012 I.

NOVEMBER.

Upper Odai Dam

Estimate of Rs. 3,850 for providing jib crane to lift falling shutters of — of Korampallam tank, Srívaikuntham anicut system, in the Tinnevelly division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From W. JOPP, Esq., Executive Engineer, Kistna Eastern Division, to the Superintending Engineer, II Circle, dated 4th November 1892, No. 4506.

I have the honour to submit the annual report on the irrigation floating plant and the usual statement of cost of upkeep, &c., for the ensuing year 1893–94.

2. The floating plant is in good working order except the dredging plant. Part I briefly describes the state of repair of the dredges. Of these Nos. 1 and 3, being under repairs, will not be available for use during the ensuing dredging season. Nos. 2 and 5 are old, the machinery antiquated and worn-out and inefficient, and the hulls are very weak from age. The Cockburn's dredger is in good order. To serve these dredges there is but one trap punt.

3. It was reported last year that three boats, Nos. 48, 53 and 55, were sunk in the river in 1890. Of these, one, viz., No. 55, was recovered during the dry season of 1891, but, owing to depth of water in which the other two were sunk as well as the considerable deposit of mud over them, attempt was not made in that year to recover those two; during this dry season, however, the place where the boats were sunk was ring bunded, the water pumped out and the boats with much difficulty recovered at a cost of Rs. 367. They were found to be but little damaged and are now in the workshops under repair. As reported in last year, the two small mud flats are quite useless and not worth repairing; if sanction is given, they will be broken up and the material utilized.

4. It will be noticed that there is an increase in cost of upkeep. This is due chiefly to the enhanced rate at which, under orders of Government, the centage on workshop charge has to be levied.

ENCLOSURES.

STATEMENT of irrigation floating plant in the Kistna district showing the estimated cost of upkeep during the year 1893–94.

Part I.—*Steamers and Steam Dredges.*

Registered number.	Details of plant.	Value of plant.		Probable cost of upkeep in 1893–94.	Remarks.
	Description.	Original.	Present book value.		
		RS.	RS.	RS.	
1	Steamer	13,131	5,897	1,230	Machinery and boiler in fair working order. Plates in hull below water line are thin and weak.
1	Cockburn's dredger ..	5,034	4,279	100	In fair working order.
	Special repairs	..	7		
1	Dredge	15,614	669	365	Under repairs in workshops, its boiler requiring re-tubing and new tube plates, &c.
	Special repairs	..	709		
2	Dredge	15,614	316	365	
3	Do.	28,357	— 3,156	510	Machinery old and worn; the boiler old and weak and should not be used; hull weak; not worth repairing.
	Special repairs	..	260		
5	Dredge	30,439	— 4,132	510	Machinery old and worn; the hull is weak.
	Special repairs	..	240		
	Total ..	95,058	— 808	1,850	

Part II.—*Boats and Punts.*

Registered number.	Details of plant. Description of boats.	Value of plant. Original.	Value of plant. Present book value.	Probable cost of upkeep for 1893-94.	Remarks.
		RS.	RS.	RS.	
1	Iron punt	2,186	107	190	In good order.
	Special repairs	..	33		
6	Iron punt	2,185	277	190	Ribs are weak.
	Special repairs	..	264		
8	Iron punt	2,172	1,181	190	In fair working order.
	Special repairs	..	..		
9	Iron punt	2,172	1,270	190	
	Special repairs	..	30		
11	Iron punt	2,172	—283	225	Under repairs in workshops.
12	Do.	3,951	2,660	225	No repairs have been done this year.
16	Do.	2,172	769	170	Not painted.
17	Do.	4,091	2,072	145	In good order.
18	Do.	2,299	830	145	
19	Do.	2,299	1,330	145	
20	Do.	5,916	3,926	195	
21	Do.	1,584	364	145	
22	Do.	1,524	316	145	
	Special repairs	..	180		
23	Iron punt	1,524	416	145	
24	Do.	2,181	1,044	145	
26	Do.	1,960	868	145	
27	Do.	1,960	868	145	Under repairs in workshops.
28	Do.	1,960	868	145	Not repaired this year.
29	Do.	400	40	100	Do.
30	Do.	400	40	125	Under repairs in workshops.
31	Do.	250	25	85	Not repaired this year.
32	Do.	1,400	185	125	Under repairs in workshops.
50	Do.	4,063	2,648	190	In good order.
	Special repairs	..	32		
51	Iron punt	4,171	2,736	190	
52	Do.	4,242	2,792	225	
53	Hull of old dredge No. 9 ..	839	755	225	Deck is very weak; requires to be strengthened.
29	Iron punt	2,812	988	135	In good order. Transferred from the Godávari in 1890-91. Through a misunderstanding the numbers were not revised so as to be consecutive to those of the Kistna boats. It will be done without fail in next dry season. Deck to be repaired.
4	Do.	2,811	1,044	135	
6	Do.	2,812	1,283	135	
8	Do.	2,812	851	135	
9	Do.	2,812	920	135	
16	Do.	2,812	1,282	135	
19	Do.	2,812	647	135	
23	Do.	2,812	577	135	
24	Do.	2,812	1,010	135	
26	Do	2,811	1,140	135	
28	Do.	2,811	1,341	135	
29	Do.	2,811	527	135	
32	Do.	2,811	923	135	
33	Do.	2,811	998	135	
96	Do.	3,610	583	135	
	Total ..	1,03,045	42,757	6,315	
33	Wooden punt with iron ribs complete.	2,500	—250	220	In good order.
	Special repairs	..	27		
34	Wooden punt with iron ribs complete.	2,500	—250	215	
35	Do. do. do. ..	3,000	—100	245	
	Special repairs	..	197		
36	Wooden punt with iron ribs complete.	3,000	—300	220	
	Special repairs	..	390		
37	Wooden punt with iron ribs complete.	3,000	1,100	280	
	Special repairs	..	140		
38	Wooden punt with iron ribs complete.	2,500	600	270	
39	Do do. do. ..	2,288	510	215	
	Special repairs	..	210		
40	Wooden punt with iron ribs complete.	2,287	766	270	
42	Do. do. do. ..	2,287	538	270	In fair working order.
43	Do. do. do. ..	2,600	960	310	In good order.
	Special repairs	..	100		
44	Wooden punt with iron ribs complete.	2,600	400	190	

Part II.—*Boats and Punts*—cont.

Registered number.	DETAILS OF PLANT. Description of boats.	VALUE OF PLANT. Original.	VALUE OF PLANT. Present book value.	Probable cost of upkeep for 1893–94.	Remarks.
		RS.	RS.	RS.	
45	Wooden punt with iron ribs complete.	2,160	696	200	In good order.
	Special repairs	..	85		
47	Wooden punt with iron ribs complete.	2,600	600	410	
	Special repairs	..	230		
48	Wooden punt with iron ribs complete.	2,160	709	270	Lately raised from the river and under repairs in workshops. Most probably special repairs will be required.
49	Do. do. do. ..	2,600	700	350	In good order.
	Special repairs	..	150		
53	Wooden punt with iron ribs complete.	2,600	600	280	Lately raised from the river and under repairs in workshops; special repairs will be required.
54	Do. do. do. ..	2,160	696	180	In good order.
55	Do. do do. ..	2,160	480	270	
	Special repairs	..	324		
56	Wooden punt with iron ribs complete.	2,600	960	215	
	Special repairs	..	95		
57	Wooden punt with iron ribs complete.	2,055	630	270	
58	Do. do. do. ..	1,900	540	270	
59	Do. do. do. ..	2,013	1,008	270	
60	Do. do. do. ..	2,075	856	220	
	Special repairs	..	78		
61	Wooden punt with iron ribs complete.	2,085	863	270	
	Special repairs	..	45		
62	Wooden punt with iron ribs complete.	2,156	918	270	In fair working order.
63	Do. do. do. ..	2,064	848	165	
64	Do. do. do. ..	2,168	926	270	
65	Do. do. do. ..	2,169	926	270	
66	Do. do. do. ..	2,164	928	215	
67	Do. do. do. ..	2,266	1,006	270	In good order.
68	Do. do. do. ..	2,238	982	180	
	Special repairs	..	45		
69	Wooden punt with iron ribs complete.	3,811	2,248	245	
70	Do. do. do. ..	2,553	1,240	280	In fair working order.
	Total ..	79,319	25,450	8,345	
	Mud punt	821	124	175	Too weak and useless for work: sanction has been asked to break it up.
	Do.	822	124	175	
	Total ..	1,643	248	350	
41	Small iron punt	250	150	60	In good order.
1	Scouring dam	..	..	215	Transferred from the Godávari. The apparatus is in fair working order. Hull of boat requires examination.

Registered number.	DETAILS OF PLANT. Description of boats.	Date of construction.	MEASUREMENT OF PLANT. Hull over all. Length.	Hull over all. Breadth.	Hull over all. Depth.	When loaded.	Tonnage according to navigation rule measurement.	Original.	Present book value.	Probable cost of upkeep for 1893–94.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
								RS.	RS.	RS.	
46	Trap punt ..	..	..	..	..	..	..	3,652	2,320	125	In good order.
	Special repairs ..	..	..	..	..	..	..	..	113		
	Total ..	..	..	..	..	..	..	3,652	2,433	125	

Registered number.	DETAILS OF PLANT. Description of boats.	Date of construction.	MEASUREMENT OF PLANT. Hull over all. Length.	Breadth.	Depth.	When loaded.	Tonnage according to navigation rule measurement.	Original.	Present book value.	Probable cost of upkeep for 1893-94.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
			FT. IN.	FT. IN.	FT. IN.			RS.	RS.	RS.	
1	Anicut paddle boat "Violet."	..	..	..	..	..	..	900	100	135	In good order.
1	Pinnace for Anicut Superintendent.	..	..	..	..	..	..	224	247	20	Under repairs in workshops.
103	Circular trap punt..	Received from Godávari in 1891-92.	13 7	13 7	4 1	' 3	..	1,200	159	40	Transferred from Godávari; in good order. Proposals for alterations are being submitted to the Superintending Engineer for sanction.
6	Staff boat ..	..	..	..	..	..	..	990	508	95	In good order.
9	Do.	..	..	..	..	..	..	1,810	54	95	The boat is irrepairable, sanction has been asked to sell it by auction.
11	Do.	..	..	..	..	..	..	1,621	425	105	In good order.
12	Do	..	..	..	..	..	..	1,621	436	105	In good order.
14	Do.	..	..	..	..	..	..	1,355	339	95	In good order.
15	Do.	..	..	..	..	..	..	1,963	838	105	In good order.
16	Do.	..	..	..	..	..	..	1,556	778	95	In good order.
17	Do.	..	..	..	..	..	..	2,486	2,486	105	In fair order.
	Total ..	..	..	..	..	..	..	12,902	5,864	800	
	Grand Total ..	..	..	..	..	..	..	..	..	19,485	

DETAILED approximate estimate of the annual cost of maintenance of Irrigation floating plant in Kistna district during the year 1893–94.

Particulars.	Steamer "Alexandria."	Dredges Nos. 1 and 2.	Dredges Nos. 3 and 5.	Iron punt Nos. 1 and 6.	Iron punt No. 8.	Iron punt No. 9.	Iron punt No. 11.	Iron punt No. 12.	Iron punt No. 16.	Iron punt Nos. 17 and 18.	Iron punt No. 19.
1	2	3	4	5	6	7	8	9	10	11	12
Docking and launching	..	..	..	10	15	8	8	10	6	8	15
Painting	90	112	140	36	40	36	35	36	36	30	28
Caulking	6	24	78	28	33	39	32	30	38	25	30
Stocker	36	..	..	..	..	..	..	..	..	..	..
Lascars	28	70	80	4	4	4	4	4	4	4	4
Ropes, &c.	12	21	22	..	4	4	4	5	4	4	4
Sundry repairs	119	100	152	66	46	51	88	87	38	36	27
Miscellaneous	150	..	..	..	..	..	..	..	..	..	..
Expenditure for use by departmental officers.	700	..	..	..	..	..	..	..	..	..	..
Serang	..	38	38	..	..	..	..	..	..	..	..
Tarring	..	..	..	14	16	16	16	15	16	14	13
Caulking and tarring	..	..	..	..	..	..	..	..	..	..	..
Centage and contingencies	89	..	..	32	32	32	38	38	28	24	24
Total ..	1,230	365	510	190	190	190	225	225	170	145	145

Particulars.	Iron punt No. 20.	Iron punt Nos. 21 to 24 and 26 to 28.	Iron punt No. 29.	Iron punt Nos. 30 and 32.	Iron punt No. 31.	Iron punt No. 50.	Iron punt No. 51.	Iron punt Nos. 52 and 53.	Godávari iron punts Nos. 2, 4, 6, 8, 9, 16, 19, 23, 24, 26, 28, 29, 32, 33 and 96.	Composite punts Nos. 33 and 60.	Composite punts Nos. 84, 39 and 66.
1	13	14	15	16	17	18	19	20	21	22	23
Docking and launching	10	8	8	6	8	10	8	8	12	12	10
Painting	40	20	29	29	20	50	52	52	31	..	..
Caulking	34	18	18	16	15	35	34	31	36	84	85
Stocker	..	..	..	..	..	..	..	..	..	..	..
Lascars	4	4	4	4	4	4	4	4	..	7	7
Ropes, &c.	5	4	4	3	2	5	5	5	11	4	5
Sundry repairs	52	56	9	35	14	26	27	59	2	76	72
Miscellaneous	..	..	..	..	..	..	..	..	..	..	..
Expenditure for use by departmental officers.	..	..	..	..	..	..	..	..	..	..	..
Serang	..	..	..	..	..	..	..	..	..	..	..
Tarring	17	10	11	11	8	28	28	28	20	..	..
Caulking and tarring	..	..	..	..	..	..	..	..	..	..	..
Centage and contingencies	33	24	17	21	14	32	32	38	23	37	36
Total ..	195	145	100	125	85	190	190	225	135	220	215

Detailed approximate estimate of the annual cost of maintenance of Irrigation floating plant in Kistna district during the year 1893–94—*cont.*

Particulars.	Composite punts Nos. 35 and 69.	Composite punt No. 36.	Composite punts Nos. 37, 53 and 70.	Composite punts Nos. 38, 40, 42, 48, 55, 57, 58, 59, 61, 62, 64, 65 and 67.	Composite punt No. 43.	Composite punt No. 44.	Composite punt No. 45.	Composite punt No. 47.	Composite punt No. 49.	Composite punt No. 54	Composite punt No. 56.	Composite punt No. 63.	Composite punt No. 68.	Small iron punt No. 41.	Trap punt No. 46.	Godávari circular trap punt No. 103.	Anicut paddle boat "Violet."	Pinnace for Anicut Superintendent.	Mud punts.	Staff boats Nos. 6, 9, 14 and 16.	Staff boats Nos. 11, 12, 15 and 17.	Cockburn's dredger.	Scouring dam apparatus.
	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Docking and launching	12	12	13	12	11	15	13	13	13	10	13	15	13	6	8	6	9	..	..	..	..	..	12
Painting	..	..	..	..	..	..	..	..	..	..	..	..	..	13	50	10	39	4	..	..	..	..	31
Caulking	99	84	106	90	108	93	81	105	99	85	89	78	89	..	8	..	39	9	54	..	..	..	36
Stocker	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lascars	7	7	7	7	7	7	7	..	7	7	7	7	7	4	4	4	14	..	42	..	..	30	35
Ropes, &c.	4	4	4	4	4	4	4	4	4	4	4	6	5	3	4	2	..	1	..	10	10	15	11
Sundry repairs	82	76	103	112	128	39	61	219	168	44	66	31	36	19	18	11	16	3	50	15	20	35	34
Miscellaneous	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Expenditure for use by departmental officers.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Serang	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	..
Tarring	..	..	..	..	..	..	..	..	..	..	..	..	..	5	12	..	4	..	..	..	..	..	20
Caulking and tarring	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	75	..	..
Centage and contingencies	41	37	47	45	52	32	34	69	59	30	36	28	30	10	21	7	23	3	29	..	..	..	36
Total ..	245	220	280	270	310	190	200	410	350	180	215	165	180	60	125	40	135	20	175	95	105	100	215

ABSTRACT showing the comparison of details between the estimated maintenance cost of floating plant in Kistna district for 1892–93 and 1893–94.

—	NUMBERS.		ORIGINAL VALUE.		BOOK VALUE.		COST OF UPKEEP.	
	1893–94.	1892–93.	1893–94.	1892–93.	1893–94.	1892–93.	1893–94.	1892–93.
			RS.	RS.	RS.	RS.	RS.	RS.
Steamer	1	1	13,131	13,131	5,897	7,210	1,230	1,180
Dredges	5	5	95,058	95,058	— 808	12,234	1,850	1,850
Iron punts	41	41	1,03,045	1,03,045	42,757	52,518	6,315	5,635
Composite punts	33	33	79,319	79,319	25,450	31,266	8,345	7,461
Iron punt, small	1	1	250	250	150	175	60 }	55
Scouring dam	..	..	..	..	..	..	215 }	
Trap punt	1	1	3,652	3,652	2,433	2,685	125	110
Circular trap punt	1	..	1,200	..	159	..	40	..
Anicut paddle boat "Violet" ..	1	1	900	900	100	190	135	120
Pinnace for Anicut Superintendent.	1	1	224	224	247	269	20	19
Mud punts	2	2	1,643	1,643	248	412	350	320
Staff boats	8	6	12,902	9,426	5,864	3,656	800	600
Total ..	95	92	3,11,324	3,06,648	82,497	67,084	19,485	17,350

No. 2016 K.S.

Forwarded to the Chief Engineer for Irrigation.

2. The two small mud flats are quite useless and are not worth repairing. I think they should be disposed of as soon as possible.

(Signed) J. W. MARTIN,
Superintending Engineer, II Circle.

14th November 1892.

ORDER—dated 30th November 1892, No. 1013 I., Public Works.

The total estimate, amounting to Rs. 19,485 or 19,500 in round sum, for maintaining the floating plant of the Kistna delta for 1893–94 including Rs. 700 for working the steamer *Alexandria* when required for use by the Public Works officers on duty, is approved and will be included in the budget estimate of major works for the ensuing year.

2. The two small mud flats, which are unserviceable, will be disposed of as suggested.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 30th.

Recd. *Encl.*

G.O., 30th Nov. 1892, No. 1013 I.

NOVEMBER.

Floating Plant, Kistna Delta

Estimate for maintaining the — for 1893-94, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From A. H. GARRETT, Esq., Executive Engineer, Madura Division, to the Superintending Engineer, VI Circle, dated 4th November 1892, No. 576 S.E.

Adverting to your No. 789 M.D. of 26th September 1892, I have the honour to report that a mistake was made in showing crest of extension at 1000·03. Only a portion on either side of the sand sluice was intended to be at this level so as to admit of the sand sluice being worked during floods.

2. As the Chief Engineer considers needle shutters unnecessary, the sand sluice will not be built as originally intended and the estimate has been revised accordingly.

No. 847 M.D.

Copy, together with the revised estimate of Rs. 3,500 for constructing a head sluice and extending the Chuttrapatty anicut across the Suruliyár, is forwarded to the Chief Engineer for Irrigation with reference to his No. VI/43 M.D., dated 22nd October 1892.

2. In the circumstances stated above it is requested that the estimate now submitted (which has been reduced by Rs. 650) may be approved and submitted for sanction of Government.

Trichinopoly,
10th November 1892.

(Signed) A. C. SMITH, Lt.-Col., R.E.,
Superintending Engineer, VI Circle.

Order—dated 30th November 1892, No. 1014 I., Public Works.

The following estimate is sanctioned:—

Provincial.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Madura Division.
Original Works.
Constructing a head sluice and extending the Chuttrapatty anicut across the Suruliyár.

	RS.
Estimate	3,500

2. This sanction is registered as No. 141 I. of 1892–93.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, VI Circle, with 7 enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 30th.

Recd. *Encl.*

G.O., 30th Nov. 1892, No. 1014 I.

NOVEMBER.

Chuttrapatty Anicut

Estimate of Rs. 3,500 for constructing a head sluice and extending the — across the Suruliyár in the Madura division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—again the following paper :—

G.O., dated 1st August 1892, No. 659 I., Public Works.

READ—also the following papers :—

From A. A. G. MALET, Esq., Executive Engineer, Kistna Western division, to the Superintending Engineer, II Circle, dated 10th November 1892, No. 616 S.

In reply to your No. 1/1159 K.S., dated 12th October 1892, and in continuation of my No. 547 S., dated 15th October 1892, I have the honour to enclose letter, dated 21st October 1892 (to be returned), from Messrs. Adinarayana Brothers.

ENCLOSURE.

From Messrs. J. ADINARAYANA BROTHERS, Merchants, Guntúr, to the Executive Engineer, Kistna Western division, dated 21st October 1892.

With reference to your office Nos. 536, dated 25th July 1892, 564, dated 23rd August 1892, and 785, dated 15th October 1892, we regret to inform you that the condition laid down by the Government for utilizing water power at the locks are very rigorous and are not such as to encourage any one to start a new industry which will ultimately bring a large amount of revenue to the Government without any additional cost. For this reason we propose the following amendments to the several conditions laid down by the Chief Engineer and sanctioned by Government as per G.O., No. 659 I., of 1st August 1892 :—

(1) The sluices and channels on Government land should be constructed by the Government just as in the cases of irrigation sluices. As there is already a precedent we hope there will not be any objection to its being followed.

(2) The amount to be paid shall be Rs. 400 at least for a period not less than 20 years, and, since it is entirely a new business, as the first year will be occupied in setting up machinery and in trials, the payments should begin from second year.

We shall feel obliged if you kindly write to the Government and obtain sanction for the above amendments to the conditions already laid down and we shall be very glad to undertake the work near any lock suitable to our business where the works can be conveniently constructed without least possible interference with Government works in either division in the district.

Hoping that you will be kind enough to obtain sanction soon so that we may finish building sluices and when the canals are closed.

No. 2018 K.S.

Forwarded to the Chief Engineer for Irrigation with reference to G.O., dated 1st August 1892, No. 659 I.

2. I think the charge demanded for the water is high. The water will not be lost as it is laid down in the first condition that it must be returned again to the canal,

3. There is much water power available at the lcks of the Godávari and Kistna systems, but all attempts made heretofore to utilize it have been unsuccessful. I think, therefore, that every reasonable concession should be made to Messrs. J. Adinarayana Brothers in their attempt to make use of the power.

14th November 1892.

(Signed). J. W. MARTIN,
Superintending Engineer, II Circle.

No. 197 I.

Note by the Acting Chief Engineer for Irrigation.

It is recommended that these concessions may be granted to the applicants as pioneers of a new industry subject to the following conditions:—

(*a*) The concession shall not be transferable without the consent of the Superintending Engineer.

(*b*) If the concession be not availed of within two years it will be cancelled.

CHEPÂK, 23rd Nov. 1892.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 30th November 1892, No. 1015 I., Public Works.

The recommendations of the Chief Engineer for Irrigation are approved.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, the Superintending Engineer, I Circle.
,, the ,, ,, II ,,
,, other Superintending Engineers.
,, the Revenue Department.
Editors' Table.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated November, 30th.

Recd. *Encl.*

G.O., 30th Nov. 1892, No. 1015 I.

NOVEMBER.

Water-power at Commamur and Duggirala Locks

Recommendations of the Chief Engineer for Irrigation regarding certain concessions asked for by Messrs. J. Adinarayana Brothers in connection with the lease of —, Kistna district, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

TABULAR STATEMENT OF MISCELLANEOUS PROCEEDINGS AND MATTERS OF ROUTINE,

IRRIGATION,

FOR THE MONTH OF NOVEMBER 1892.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Waste lands under the Periyár Project.—Proceedings, Revenue Department, passing orders on the subject of disposal of —, communicated to the Superintending Engineer, VI Circle.	1st Nov. 1892, No. 887 I.	26th Feb. 1886, Nos. 201–2 I. 3rd Aug. 1889, Nos. 362–63 I. 24th Jan. 1890, No. 49 I. 9th July 1890, Nos. 381–82 I. 2nd Dec. 1890, No. 4973 C. 22nd May 1891, No. 249 D. 23rd Sept. 1891, No. 927 D. 7th Nov. 1891, No. 4915 C. 8th Mar. 1892, No. 228 I. 14th Mar. 1892, No. 252 I. 25th Aug. 1892, No. 248 D.
Map.—Proceedings, Political Department, recording office-note from the Public Works Department (Irrigation Branch) forwarding a — connected with the French territory, recorded.	1st do. do. No. 890 I.	16th June 1890, No. 333 I. 6th May 1891, No. 156 D.
Periyár Project.—Notes of inspection of the — by Colonel F. J. Home, R.E., Inspector-General of Irrigation, dated 21st February 1891, recorded.	2nd do. do. No. 891 I.	26th Sept. 1892, No. 4244 C.
Land.—Notification for acquisition of — required for excavating a jungle stream in Moguttur village, Narsápur taluk, Godávari district, ordered to be published in the *Fort St. George Gazette.*	3rd do. do. No. 897 I.	......
Provincial statement of objectionable items, &c., for 30th June 1892, *V Circle, appropriations* —. Orders on —	3rd do. do. No. 898 I.	27th June 1892, No. 561 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Statement of probable Provincial receipts and expenditure under 43. Minor Works and Navigation for 1893–94, transferred to the Financial Department.	3rd Nov. 1892, No. 901 I.	11th Dec. 1890, No. 3291 W.
Six months' estimate for 1892–93.—Telegram to the Government of India intimating the despatch of the — for Irrigation Branch, and explaining the cause of delay in its submission.	4th do. do. No. 902 I.	17th Oct. 1892, No. 4447 C.
Copy of the above Proceedings to the Government of India.	4th do. do. No. 903 I.	......
Suit instituted by the ryots of Patraperumbadur.—Action of the Board of Revenue regarding the answer proposed to be filed in the — against the Executive Engineer, Chingleput division, in the Tiruvallúr District Munsif's Court for establishing their claims for exclusive use of water in the Mettathukal, confirmed.	4th do. do. No. 904 I.	......
Land.—Notification for acquisition of — required for bunding Inapur breach in the Núzvid taluk, Kistna district, ordered to be published in the *Fort St. George Gazette.*	5th do. do. No. 906 I.	......
Land.—Notification for acquisition of — required for the Varini tank-bund in the Nellore district, ordered to be published in the *Fort St. George Gazette.*	5th do. do. No. 907 I.	......
Provincial statement of objectionable items, &c., for 30th June 1892, *II Circle, appropriations.*—Orders on —.	5th do. do. No. 908 I.	28th June 1892, Nov. 569 I.
Credit.—Telegram from the Superintendent of Works, No I Periyár Division, requesting that the Examiner may be instructed to grant — of Rs. 60,000 for November 1892, recorded.	5th do. do. No. 909 I.	27th Oct. 1892, No. 878 I.
Rushikulya Project.—Telegram from the Government of India sanctioning an additional grant of Rs. 57,400 for —, communicated to the officers concerned.	7th do. do. No. $\frac{909}{A}$ I.	19th Sept. 1892, No. 791I.
Lands.—Notification for acquisition of — for the Chittampatti off-take in the ninth branch channel, Periyár Project, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 910 I.	......
Land.—Notification for acquisition of — in the Madura taluk required for the 11th Reach, Periyár channel, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 911 I.	......
Land.—Notification for acquisition of — in the villages of Mangalam and Narasingampatti, Madura district, required for the tenth branch channel, Periyár Project, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 912 I.	......
Land.—Notification for acquisition of — required for the Gostanadi channel in Bhímavaram, Godávari district, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 913 I.	12th Aug. 1884, No. 728 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Land.—Notification for acquisition of — required for Lock establishment quarters at Yandagandi, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th Nov. 1892, No. 914 I.	......
Land.—Notification for acquisition of — required for repairing Chinamiran main drain at Vempad in Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 915 I.	......
Land. — Notification for acquisition of — for repairing Polamuru drain in Namuduru, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 916 I.	......
Land.—Notification for acquisition of — required for Annagacodu drain in Kalanapudi village, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 917 I.	......
Land.—Notification for acquisition of — required for Tokkadu drain in Machapuri, Narasápur taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 918 I.	......
Land.—Notification for acquisition of — required for Tokkodu drain in Tummalapalli, Narasápur taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 919 I.	......
Land.—Notification for acquisition of — required for repairing Peeralacodu drain at Víravásaram, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 920 I.	......
Land.—Notification for acquisition of — required for the extension of Azzamur channel in Doddanpudi village, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 921 I.	......
Land.—Notification for acquisition of — required for repairing Cherukumilli channel in Cherukumilli, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 922 I.	......
Land.—Notification for acquisition of — required for repairing Gostanadi channel at Palakoderu, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 923 I.	......
Land.—Notification for acquisition of—required for extension of Gostanadi channel in Kumadavilli, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 924 I.	......
Land.—Notification for acquisition of — required for repairing Gostanadi channel in Palakoderu, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	7th do. do. No. 925 I	......
Provincial statement of objectionable items, &c., for 31st August 1892, *V Circle, estimates.*—Orders on —.	8th do. do. No. 931 I.	25th Aug. 1892, No. 719 I. and file.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Estimates.—Statement submitted by the Chief Engineer for Irrigation showing the — of expenditure by the Public Works Department from Local Irrigation Cess Fund for 1893–94, transferred to the Revenue Department.	10th Nov. 1892, No. 933 I.	......
Provincial statement of objectionable items, &c., for 30th June 1892, *III Circle (supplemental), appropriations.*—Orders on —.	11th do. do. No. 934 I.	25th Aug. 1892, No. 718 I. and file.
Provincial statement of objectionable items, &c., for 30th June 1892, *IV Circle, appropriations.*—Orders on —.	11th do. do. No. 935 I.	9th July 1892, No. 593 I. 9th Aug. 1892, No. 679 I. 6th Sept. 1892, No. 763 I.
Excess outlay under "43. *Minor Works and Navigation*".—Proceedings, Financial Department, on the subject of sanction required to — Rs. 98,997, communicated to the Examiner, Public Works Accounts.	11th do. do. No. 936 I.	9th Dec. 1891, No. 5539 C. 15th Jan. 1892, No. 49 I. 3rd Feb. 1892, No. 330 W. 17th Mar. 1892, No. 276 I. 4th Oct. 1892, No. 4364 C.
Land.—Notification for acquisition of— required for Duvvur branch channel extension in the Nellore district, ordered to be published in the *Fort St. George Gazette.*	11th do. do. No. 939 I.	......
Land.—Notification for acquisition of — required for excavation of the proposed branch of Penumadam branch of Konteru channel, Narsápur taluk, ordered to be published in the *Fort St. George Gazette.*	11th do. do. No. 940 I.	......
Land.—Notification for acquisition of — required for improving Muthenucodu channel in Nadipalli, Bhímavaram taluk, ordered to be published in the *Fort St. George Gazette.*	11th do. do. No. 941 I.	......
Land.—Notification for acquisition of — required for the right side parallel channel from Velivalu drain, Narsapur taluk, ordered to be published in the *Fort St. George Gazette.*	11th do. do. No. 942 I.	......
Provincial statement of objectionable items, &c., for 31st August 1892, *VI Circle, estimates.*—Orders on —.	11th do. do. No. 943 I.	9th Dec. 1891, No. 936 I. 20th Feb. 1892, No. 172 I. 19th May 1892, No. 472 I. 29th Aug. 1892, No. 739 I.
Minor Irrigation Works.—Proceedings, Revenue Department, recording Board's Proceedings reviewing the progress report of — up to the end of July 1892, recorded.	12th do. do. No. 945 I.	......
Manginapudi canal.—Proceedings, Revenue Department, regarding raising by a system of tolls the funds required for defraying the cost of the maintenance of the proposed — and for repaying the interest on the capital cost of its construction, recorded.	12th do. do. No. 946 I.	......

Subjects.	Number and Date of Orders.	Numbers and Dates of previous Orders.
Lands.—Notification for acquisition of — for Vennar regulator right bank, Trichinopoly district, ordered to be published in the *Fort St. George Gazette.*	14th Nov. 1892. No. 950 I.	......
Lands.—Notification for acquisition of — required for Kommanur canal, Kistna district, ordered to be published in the *Fort St. George Gazette.*	14th do. do. No. 951 I.	......
Lands.—Notification for acquisition of — for removing spoil heaps and high grounds, &c., Kommanur canal, Kistna district, ordered to be published in the *Fort St. George Gazette.*	14th do. do. No. 952 I.	......
Lands.—Notification for acquisition of — for constructing outlet in 43rd mile of Kommamur canal, Kistna western delta, ordered to be published in the *Fort St. George Gazette.*	14th do. do. No. 953 I.	30th Aug. 1892, No. 3990 C.
Provincial statement of objectionable items, &c., for 31st August 1892, *IV Circle, Estimates.*—Orders on —.	15th do. do. No. 954 I.	8th Feb. 1892, No. 120 I. 1st Mar. 1892, No. 676 W. 15th June 1892, No. 537 I. 26th Aug. 1892, No. 734 I.
Provincial statement of objectionable items, &c., for 31st August 1892, *III Circle, Estimates.*—Orders on —.	16th do. do. No. 955 I.	7th Nov. 1891, No 2978 W. 4th Jan. 1892, No. 11 W. 6th May 1892, No. 1419 W. 23rd Aug. 1892, No. 2345 W.
Provincial statement of objectionable items, &c., for 31st August 1892, *II Circle, Estimates.*—Orders on —.	16th do. do. No. 956 I.	8th Feb. 1892, No. 120 I. 8th Feb. 1892, No. 123 I. 24th Feb. 1892, No. 190 I. 20th April 1892, No. 396 I. 30th May 1892, No. 503 I. 2nd Aug. 1892, No. 662 I. 30th Aug. 1892, No. 740 I.
Land.—Notification for acquisition of — in the villages of Renganathapuram and Puduppadaneedu, Kumbakónam taluk, required for closing the breaches in the Mudikondanur river, &c., ordered to be published in the *Fort St. George Gazette.*	16th do. do. No. 957 I.	......
Land.—Notification for acquisition of — required for Sarvepalli channel, Nellore district, ordered to be published in the *Fort St. George Gazette.*	16th do. do. No. 958 I.	......

Subjects.	Number and Date of Orders.	Numbers and Dates of previous Orders.
Civil Account Code.—Letter from the Government of India informing that the Comptroller-General has been requested to arrange for the supply of the 5th edition of volume I of the —, &c., recorded.	16th Nov. 1892, No. 959 I.	29th July 1887, No. 2539 C. 23rd Aug. 1887, Nos. 525–26 I. 19th Sept. 1887, No. 560 I. 24th Sept. 1887, No. 3245 C. 20th Oct. 1892, No. 4510 C.
Rent.—Proposal of the Collector of Ganjam to grant a monthly — of Rs. 10 for the building engaged for office by the Special Deputy Collector at Aska employed on the acquisition of lands for the Rushikulya Project, sanctioned.	17th do. do. No. 962 I.	......
Water-supply to Ramayanipur, Hyderabad Territory.—Ordered that a copy of the letter from the Executive Engineer, Kurnool division, on the subject of —be forwarded to the Resident at Hyderabad, to ascertain if the assumption of the Executive Engineer is correct	17th do. do. No. 963 I.	25th Aug. 1892, No. 720 I.
Samalacotta and Junction Canals.—Correspondence on the subject of breaches in the — caused by abnormal rainfall of 18th and 28th to 30th October 1892, recorded.	18th do. do. No. 967 I.	......
Land.—Notification for acquisition of — required for the extension of Golivibaduva channel in Pemmarazupolavaram, Narsápur talúk, Godávari district, ordered to be published in the *Fort St. George Gazette.*	18th do. do. No. 970 I.	......
Land.—Notification for acquisition of — for the extension of Muttancodu channel in Tundurru, Narsápur taluk, Godávari district, ordered to be published in the *Fort St. George Gazette.*	18th do. do. No. 971 I.	......
Land.—Notification for acquisition of — required for repairing Achanta channel in Pittala-Vemavaram, Godávari district, ordered to be published in the *Fort St. George Gazette.*	18th do. do. No. 972 I.	......
Land.—Notification for acquisition of — required for diversion bank at Mapur breach, Nuzvid taluk, Kistna district, ordered to be published in the *Fort St. George Gazette.*	18th do. do. No. 973 I.	......
Samalacotta, Ellore and Venkiah Canals.—Report from the Superintending Engineer, I Circle, regarding breaches in the — by the Cyclonic rains of 28th to 30th October 1892, recorded.	19th do. do. No. 976 I.	......
Land improvement in India.—Note by the Chief Engineer for Irrigation on the subjects dealt with in Colonel Fraser's pamphlet on —, recorded.	19th Nov. 1892, No. 977 I.	......
Minor Irrigation works.—Proceedings, Board of Revenue, reviewing the progress report of — for August and September 1892, recorded.	21st do. do. No. 978 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Lands.—Revised notification for acquisition of — in the villages of Ambnabadi and Somaiguda in the Ganjam district required for the 2nd distributary at the 10th mile Rushikulya canal, ordered to be published in the *Fort St. George Gazette.*	22nd Nov. 1892, No. 988 I.	......
Land.—Notification for acquisition of — required for Periyár Project works in the Madura district, ordered to be published in the *Fort St. George Gazette.*	22nd do. do. No. $\frac{988}{A}$ I.	......
Statement of unauthorized appropriations in the Irrigation branch for October 1892.—The — forwarded to the Accountant-General, Public Works Department.	23rd do. do. No. 989 I.	......
Provincial statement of objectionable items, &c. for 31st August 189 ., *No. I Periyár Division, Estimates.*—Orders on —.	23rd do. do. No. 990 I.	15th May 1891, No. 415 I. 17th Aug. 1891, No. 637 I. 2nd Dec. 1891, No. 922 I. 17th Dec. 1891, No. 963 I. 17th Dec. 1891, No. 964 C. 22nd Feb. 1892, No. 182 I. 7th April 1892, No. 357 I. 4th April 1892, No. 346 I. 20th April 1892, No. 392 I. 14th May 1892, No. 458 I. 22nd Aug. 1892, No. 705 I.
Compensation cases.—Proceedings, Revenue Department, recording explanations for the delay in the disposal of certain — in Nellore, communicated to the officers concerned.	24th do. do. No. 991 I.	24th Mar. 1891, No. 882 W. 5th June 1891, No. 1536 W.
Compensation for land.—Proceedings, Revenue Department, recording, with remarks, Board's Proceedings regarding delay in the settlement of — taken up for irrigation purposes in the Nellore District, communicated to the Superintending Engineer, II Circle.	24th do. do. No. 992 I.	5th June 1891, No. 1536 W. 24th Nov. 1892, No. 5258 C.
Kalingaroyan channel.—Proceedings, Revenue Department, communicating with remarks Board's Proceedings submitting report regarding the levy of a local cess on irrigation under the —, communicated to the officers concerned.	25th do do. No. 993 I.	......
Unanswered References.—Proceedings, Revenue Department, recording, with remarks, Board's Proceedings submitting the list of Proceedings addressed to Government and not replied to for the quarter ending 30th September 1892, communicated to the Superintending Engineer, II Circle, with instructions.	25th do. do. No. 994 I.	25th May 1891, No. 444 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Periyár Project.—Proceedings, Revenue Department, communicating letter from the Government of India regarding the disposal of the tank-bed lands and of the waste lands commanded by the —, and the treatment of sale-proceeds in the accounts, communicated to the Chief Engineer for Irrigation and the Superintending Engineer, VI Circle.	25th Nov. 1892, No. 995 I.	26th Feb. 1886, Nos. 201–2 I. 3rd Aug. 1889, No. 362 I. 24th Jan. 1890, No. 49 I. 9th July 1890, Nos. 381–2 I. 2nd Dec. 1890, No. 4973 C. 22nd May 1891, No. 249 D. 23rd Sept 1891, No. 927 D. 7th Nov. 1891, No. 4915 C. 8th Mar. 1892, No. 228 I. 14th Mar. 1892, No 252 I. 25th Aug. 1892, No. 248 D 1st Nov. 1892, No. 887 I.
Godávari Right bank.—Proceedings, Financial Department, authorizing the Accountant-General to place Rs. 8,750 at the disposal of the Public Works Department, being the Local Fund share for raising the — between Polaveram and Vijeshwaram, communicated to the officers concerned.	25th do. do. No. 996 I.	15th Sept. 1892, No. 780 I.
Land.—Notification for acquisition of — required for the repair of the Tirumalarajan right bank in Keelapalayur, Kumbakónum taluk, ordered to be published in the *Fort St George Gazette.*	29th do. do. No. 1006 I.	......
Land.—Notification for acquisition of — for Pappagudi off-take, 9th branch channel in the Madura district, ordered to be published in the *Fort St. George Gazette.*	29th do. do. No. 1009 I.	......
Lands.—Notification for acquisition of — required for the southern channel 1,363 feet, left bank, in the Nellore district, ordered to be published in the *Fort St. George Gazette.*	29th do. do. No. 1010 I.	......
Land.—Notification for acquisition of — required for diverting river bank at Viswanadapalli, Kistna district, ordered to be published in the *Fort St. George Gazette.*	29th do. do. No. 1011 I.	......
Suit.—Letter from the Acting Government Pleader, Madras, reporting the result in the — on the file of the High Court in connection with the Nizampatam branch channel, Kistna Western division, communicated to the Superintending Engineer, II Circle, with instructions.	30th do. do. No. 1016 I.	30th Sept. 1889, No. 475 I. 9th July 1891, No. $\frac{557}{A}$ I.